

• Chapter 12

**BUILDING CODE**

Sections:

**Article 1. General Provisions**

- Sec. 12-1.1 Purpose.
- Sec. 12-1.2 Title.

**Article 2. Adoption of the International Building Codes and Amendments Thereto**

- Sec. 12-2.1 Adoption of the International Building Codes.
- Sec. 12-2.2 Amendments to the International Building Code.
- Sec. 12-2.3 Amendments to the International Residential Code for One- and Two-Family Dwellings.

**Article 3. Relocation of Buildings**

- Sec. 12-3.1 Applicability.
- Sec. 12-3.2 Application for A Relocation Permit.
- Sec. 12-3.3 Performance Security.
- Sec. 12-3.4 Issuance of Permit.
- Sec. 12-3.5 Police Escorts.
- Sec. 12-3.6 Duration and Extension of Time.
- Sec. 12-3.7 Denial of Permit.
- Sec. 12-3.8 Entry upon Premises.
- Sec. 12-3.9 Fees for Permits.
- Sec. 12-3.10 Violations and Penalties.

**Article 4. Factory Built Housing, Structure and Trailer Home**

- Sec. 12-4.1 Applicability.
- Sec. 12-4.2 Definitions.
- Sec. 12-4.3 Building Permit.
- Sec. 12-4.4 Building Permit Fee.
- Sec. 12-4.5 Building Permit Requirements.
- Sec. 12-4.6 Certificate of Approval.
- Sec. 12-4.7 Certificate Fees.
- Sec. 12-4.8 Inspection.
- Sec. 12-4.9 Transportation.
- Sec. 12-4.10 Relocation.
- Sec. 12-4.11 Violations and Penalties.

**Article 5. Thatched Material on Exterior of Building: Protection Against Exposure Fires**

- Sec. 12-5.1 Applicability.
- Sec. 12-5.2 Violations and Penalties.

## **Article 6. Energy Conservation**

- Sec. 12-6.1 Purpose.
- Sec. 12-6.2 Title.
- Sec. 12-6.3 Adoption of the International Energy Conservation Code.
- Sec. 12-6.4 Local Amendments to the IECC.

### **• Article 1. General Provisions**

#### **• Sec. 12-1.1 Purpose.**

This Chapter is for the purpose of adopting and incorporation by reference the 2006 Edition of the International Building Code and International Residential Code for One- and Two-Family Dwellings of the International Code Council, Incorporated; providing amendments thereto, regulating the construction, alteration, equipment, moving or demolition of buildings or structures in the County of Kaua‘i; providing for the issuance of permits and collection of fees therefor and providing penalties for the violation thereof. (Ord. No. 929, May 23, 2012)

#### **• Sec. 12-1.2 Title.**

This Chapter shall be known as the Building Code of the County of Kaua‘i and may be cited as the “Building Code.” (Ord. No. 929, May 23, 2012)

### **• Article 2. Adoption of the International Building Codes and Amendments Thereto**

#### **• Sec. 12-2.1 Adoption of the International Building Codes.**

The International Building Code, 2006 Edition, as copyrighted and published in 2006 and the International Residential Code for One- and Two-Family Dwellings, 2006 Edition, as copyrighted and published in 2006 by International Code Council, Incorporated, 500 New Jersey Avenue, 6th Floor, Washington, DC 20001, is by reference incorporated herein and made a part hereof, subject to the following amendments. (Ord. No. 929, May 23, 2012)

#### **• Sec. 12-2.2 Amendments to the International Building Code.**

(1) The International Building Code, 2006 Edition, is amended as follows:

(2) Section 101.1 is amended to read:

**101.1 Title.** These regulations shall be part of the Building Code of the County of Kaua‘i, hereafter referred to as “this code.”

(3) Section 101.2 is amended to read:

**101.2 Scope.** The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures within the County inland of the shoreline, except:

- where located primarily in the public way;
- public utility towers or poles;
- electrical and mechanical equipment cabinets not specifically regulated in this code;

- bridges;
- hydraulic flood control structures; and
- recreational playground equipment.

**Exceptions:**

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures shall be permitted to comply with the International Residential Code, if adopted by the County jurisdiction.
2. Existing State-owned buildings undergoing repair, alterations or additions and changes of occupancy shall be permitted to comply with the International Existing Building Code, provided the extent of the work does not exceed 50 percent of the appraised value of the building.

- (4) Section 101.2.1 is amended to read:

**101.2.1 Appendices.** Provisions in the appendices shall not apply unless specifically adopted.

**Exceptions:**

1. Appendix U, Hawai‘i Hurricane Sheltering Provisions for New Construction, shall be adopted.
2. Appendix W, Hawai‘i Wind Design Provisions for New Construction, shall be adopted.
3. Appendix X, Hawai‘i Provisions for Indigenous Hawaiian Architecture Structures, shall be adopted.

- (5) Section 101.4 is amended to read:

**101.4 Referenced codes.** The other codes referenced elsewhere in this code shall be considered guidelines of this code to the prescribed extent of each such reference.

**101.4.1 Conflicts with other codes.** If a referenced code conflicts with another applicable law of the jurisdiction, then said applicable law shall prevail over the guideline in the referenced code.

**101.4.2 Fire prevention.** Wherever the provisions of the International Fire Code are referenced, the International Fire Code shall apply to matters affecting or relating to structures, processes, and premises from the hazard of fire and explosion arising from the storage, handling, or use of structures, materials, or devices; from conditions hazardous to life, property, or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration, or removal of fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

- (6) Section 102.2 is amended to read:

**102.2 Other Codes and Ordinances.** Building permit applications submitted no later than six months after the effective date of this code may follow either the previous effective code or the newly adopted code provided the issuance of the building permit for applications following the previous code are completed within 18 months of the effective date of this code.

Any provisions of this code to the contrary notwithstanding, the following shall be at all times in full force and effect, and in case of conflicting requirements, the stricter shall be complied with:

- Hawai‘i Revised Statutes;
- Ordinances of the County of Kaua‘i;

- Rules and Regulations of the Land Use Commission, State of Hawai‘i;
- Subdivision Rules and Regulations adopted pursuant to the Subdivision Ordinance;
- Rules and Regulations of the Department of Water, County of Kaua‘i;
- Public Health Regulations of the Department of Health, State of Hawai‘i;
- Rules and Regulations of the Department of Labor and Industrial Relations, State of Hawai‘i;
- Fire Code of the County of Kaua‘i;
- Airport Zoning Regulations of the Director of Transportation, State of Hawai‘i.

(7) Section 102.6 is amended to read:

**102.6 Existing structures.** Buildings in existence at the effective date of this code may have their existing use or occupancy continued if such use or occupancy was legal at the effective date of this code, provided the continued use does not constitute a hazard to the general safety and welfare of the occupants and the public.

(8) Section 103 is amended to read:

### **SECTION 103 - ORGANIZATION AND ENFORCEMENT**

**103.1 Creation of Enforcement Agency.** There is hereby established in this jurisdiction a code enforcement agency that shall be under the administrative operational control of the Building Official.

**103.2 Deputies.** In accordance with the prescribed procedures and with the approval of the appointing authority, the Building Official may appoint technical officers, inspectors, plans examiners and other employees. The Building Official may deputize such inspectors or employees as may be necessary. Such employees shall have powers as delegated by the Building Official.

The Building Official may temporarily deputize inspectors, employees or volunteers to carry out the functions of the code enforcement agency in the event of a natural disaster.

(9) Section 105.1 is amended to read:

**105.1 Required.** No person, firm or corporation shall erect, construct, enlarge, repair, move, alter, improve, remove, convert, or demolish any building or structure in the County of Kaua‘i, or cause the same to be done, without first obtaining a separate building permit for each such building or structure from the Building Official.

(10) Section 105.1.3 is added to read:

**105.1.3 Solar Permit Required.** No person shall install any solar energy system on any premises, building or structure within the County, or cause the foregoing to be done, without first obtaining a building permit, issued under the authority of this Section.

**Exception:** Solar energy system work by an electrical utility or serving agency operating under a franchise or charter granted by the State of Hawai‘i.

(11) Section 105.2 is amended to read:

**105.2 Work Exempt from Permit.** A building permit shall not be required for the following; however, all other government agency codes and laws shall be complied with:

1. Work accepted under Section 101.2.

2. One-story detached accessory buildings used as tool and storage sheds, playhouses, animal shelters, green houses, trash enclosures and similar uses, provided the floor area does not exceed 200 square feet and complies to Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management, Kaua'i County Code 1987, as amended and the Administrative Laws and Rules of the Department of Health, State of Hawai'i.
3. Fences and structures such as architectural barriers and planter boxes not over 6 feet in height, measured from the finish grade to the top of the structures and constructed in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management and Chapter 16, Traffic Code, Kaua'i County Code, 1987, as amended.
4. Retaining walls, which are not over 4 feet in height, measured from the finish grade to the top of the wall. Rip-rap type retaining walls with a slope of not less than 1:1 and having a vertical dimension not over 4 feet in height, constructed in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management and Chapter 16, Traffic Code, Kaua'i County Code, 1987, as amended.
5. Sidewalks, driveways, outside paving and curbs.
6. Painting, decorating, papering, floor covering, tiling, carpeting, cabinets, counter tops and similar finish work.
7. Installation of sidings over existing exterior walls of building of Group R-3 or U Occupancy. Reroofing work for Group R-3 or U Occupancy, roofing material shall be of similar type material or application.
8. Temporary construction buildings, sheds, platforms, fences and similar structures used during the construction project or for use as props for motion pictures, filming, television, theater stage sets, scenery and live play performances.
9. Prefabricated swimming pools accessory to Group R Occupancy in which the pool walls are entirely above the adjacent grade and the capacity of water does not exceed 5,000 gallons.
10. Tents or other similar coverings used for private parties or for camping. Tents or other similar coverings erected as accessory uses in relationship to Group R and Group U Occupancies, provided such tents or other similar covering is not used as a dwelling and erected in accordance with Chapter 8, Comprehensive Zoning Ordinance and Chapter 15, Article 1 Floodplain Management, Fire Code, Kaua'i County Code, 1987, as amended.
11. Temporary tents or other similar coverings erected for commercial, ceremonial or religious purposes such as rallies, festivals and amusements provided no person, firm or corporation shall erect any tent or similar structure, which is to be used as a dwelling. Tents or other similar coverings shall be erected in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management and Chapter 15A, Fire Code, Kaua'i County Code, 1987, as amended.
12. Awnings supported by an exterior wall which do not project more than 54 inches from the exterior wall and do not require additional support of Group R and Group U Occupancies.
13. Moveable cases, counters and partitions not over 5 feet 9 inches (1753mm) in height.
14. Home television and radio antennas. Standard electroliers and flagpoles not over 35 feet in height above the finish grade.

15. Repairs which involve only the replacement of component parts or existing work with similar material for the purpose of maintenance, and which do not aggregate over \$10,000 in valuation in any 12-month period, and do not affect any electrical or mechanical installations. Repairs exempt from permit requirements shall not include any additions, change or modification in construction, exit facilities, or permanent fixtures or equipment.
  16. Architectural barriers, curbs, retaining walls, fences and structures approved and constructed with roadway or highway construction, subdivision of lands and in accordance with plans approved by the County under subdivision rules and regulations or under a grading permit.
  17. Structures such as decorative water features, lagoons, fishponds or aquatic ponds not used for human occupancy and constructed in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management, Kaua'i County Code, 1987 as amended and the Administrative Rules of the Department of Water, County of Kaua'i.
  18. Shade cloth structures constructed for nursery or agricultural purposes. Shade cloth structures or other similar coverings shall be erected in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management and Chapter 15A, Fire Code, Kaua'i County Code, 1987, as amended.
  19. Work on building or premises owned by or under the direct control of the United States or the State of Hawai'i, except where permits are specially requested by said governmental agency.
- (12) Sections 105.2.1, 105.2.2 and 105.2.3 are deleted.
- (13) Section 105.3 item number 6 is amended to read:
6. Be signed by permittee, his authorized agent, or his successor in interest, which agent or successor may be required to prove such agency or succession.
- (14) Sections 105.3.1 and 105.3.2 are deleted.
- (15) The exception to Section 105.5 is amended to read:

**105.5 Expiration.** Every permit issued by the Building Official under the provisions of this Code shall expire by limitation and become null and void, if the building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the construction or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days.

Where a permit has expired, been suspended or abandoned, a new permit shall be first obtained by the permittee, his agent, or his successor in interest, and a new permit fee equal to one-half the amount established from Table No. 1-A of this Code rounded off to the nearest dollar, based on the original valuation of such permit shall be paid, provided no changes have been made or will be made to the original plans and specifications for such work; and provided, further, that such permit has not exceeded a period of one year from the date of permit issuance or the date of suspension or abandonment of work authorized, whichever is later.

Any permittee, his agent or his successor in interest holding an unexpired permit, who is unable to commence work, may apply for an extension. Upon written request by the permittee, the Building Official may, in writing, extend the permit for a period of 180 days, however, in the event of strikes or other causes beyond the control of the building contractor or permittee, the Building Official may extend the permit for the duration of the event. No permit shall be extended more than once.

For building permits issued prior to July 1, 1984, the Building Official shall not activate and reissue a permit. If a permittee, his agent, or his successor in interest, desires to have the permitted building certified that it was done in compliance with all County of Kaua‘i or State of Hawai‘i laws, codes and ordinances at the time the original permit was issued, and that the building does not violate any laws, codes and ordinances, he may hire a duly registered licensed structural engineer or architect as required by Chapter 464, Hawai‘i Revised Statutes, as amended, to provide such certification.

**Exception:** The Building Official may activate and reissue an expired permit for the purpose of continuing the permit on an incomplete building or to secure all inspections required by this Code, the Electrical or Plumbing Codes, when the permittee complies with the following conditions:

1. For permit issued after July 1, 1984, the permittee, his agent, or his successor in interest, shall submit a minimum of three (3) copies of the original approved building plans. In the event the approved building plans are not available, the permittee shall submit a minimum of three (3) copies of plans prepared, approved and stamped by a duly registered licensed structural engineer or architect as required by Chapter 464, Hawai‘i Revised Statutes, as amended, certifying to the Building Official that the plans are the same as the original approved building plans and complies to all County of Kaua‘i or State of Hawai‘i laws, codes, and ordinances at the time the permit was issued.
2. All work that was started on an expired building permit and completed according to the approved building plans prior to the reissuance of such permit shall remain valid under the Building Code it was issued. Any new work shall conform to the current Building Code. The Building Official may waive the requirement for submitting building plans if the original are on file.

When a building permit is activated and reissued, a permit fee therefore shall be required as provided in this Section.

(16) Section 105.7 is amended to read:

**105.7 Posting Building Permit Card.** Work requiring a permit shall not commence until the building permit card is conspicuously posted on the building or structure where the work is to be done to allow the Building Official to conveniently make the required entries regarding inspection of the work. This building permit card shall be posted, maintained and made available by the permit holder until final inspection has been completed by the Building Official.

(17) Section 105.8 is added to read:

**105.8 Transferability of Building Permit.** Any assignment and/or transfer of any substantial interest in any building permit shall be subject to the approval and consent of the Department of Public Works. Such approval and consent shall not be unreasonably withheld provided that the assignee and/or transferee agrees in writing to the following:

1. To comply with the plans and specifications upon which the building permit was issued in the absence of any subsequent amendments to any applicable existing laws and ordinances as indicated in (2) below; or
2. To comply with the terms and provisions of any subsequent amendments to the Comprehensive Zoning Code, Building Code, as well as all relevant laws, ordinances, and rules and regulations which would affect either the development’s height, floor area, lot coverage, fire safety and/or land use.

3. The stricter requirements prescribed in subsection (2) hereinabove shall not be applicable in situations where the permit holder can offer documented evidence to the Building Official that he has made, in good faith, a substantial and material change in position in reliance upon the issuance of the building permit.

Upon approval by the Building Official, he shall issue a transferability permit and receive payment of the required non-refundable transfer fee of fifty dollars (\$50.00).

(18) Section 106 is amended to read:

## **SECTION 106 - CONSTRUCTION DOCUMENTS**

**106.1 Plans and Specifications.** With each application for a building permit, five sets of plans shall be submitted and specifications as required by the Building Official. One of which shall be left with the Planning Department. One will be retained by the Building Official. One approved set will be returned as a job site copy to the applicant and one approved set will be submitted to the Department of Finance, Real Property Tax Division. An additional plan and specification shall be submitted for public, hotel and commercial buildings.

All plans and specifications relating to work which affects the public safety or health and for which a building permit is required shall be prepared, designed, approved and stamped by a duly registered professional licensed structural engineer or architect as required by Chapter 464 of the Hawai'i Revised Statutes, as amended.

All plans for retaining walls 5 feet or more in height shall be prepared, designed, approved and stamped by a duly registered licensed architect or engineer in the structural or civil branches.

Plans and specifications need not be submitted when authorized by the Building Official.

**106.1.1 Information on Construction Documents.** Construction documents shall be dimensioned and drawn to scale upon suitable material.

Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the Building Official.

The plans (traditionally referred to as blueprints) are graphic representations of the building or structure. Plans, building sections and detail drawings shall be provided and drawn to scale. Building section and detail drawings need to be of an adequate scale to clearly show details. A complete set of plans shall be drawn upon suitable material not more than 30 inches by 42 inches and shall include the minimum drawings:

1. Plot or Site Plan.
2. Floor Plan.
3. Foundation Plan.
4. Framing Plans:
  - Floor Framing Plan.
  - Roof Framing Plan with Roof Trussed Detail.
5. Elevation Plans:
  - Exterior Elevations of the Building.



- Interior Elevations of Kitchen and Bathroom.
6. Building Section and Details.

#### Solar Systems

The following minimum documents are required for solar installations:

1. Three copies of plans. Plans shall include:
  - Plot plan.
  - Specifications.
  - Commercial plans shall include a one-line diagram.
2. Commercial plans shall be stamped and signed by an electrical engineer.
3. Residential plans shall be stamped and signed by an electrical engineer if over 10 KVA.
4. Complete the “Plan Review Checklist For Photovoltaic System Installation” handout.

**106.1.2 Registered Design Professional.** Where plans, specifications and documents must be prepared, designed, stamped and approved by architects or engineers, and/or the architects or engineers act as duly registered professionals of record, the architects or engineer shall comply with and perform their duties according to the following;

- a. Chapter 464 Hawai‘i Revised Statutes, Professional Engineers, Architects, Surveyors and Landscape Architects, as amended.
- b. Title 16, Chapter 115, Department of Commerce and Consumer Affairs, Hawai‘i Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects, State of Hawai‘i, as amended.

If the circumstances require, the owner may designate a substitute architect or engineer of record who shall perform all portion of the duties of the original architect or engineer of record.

The owner or the architect or engineer of record shall notify the Building Official in writing if the duly registered professional of record is changed or is unable to continue to perform the duties.

**106.2 Issuance of Permits.** The application, plans and specifications filed by an applicant for a permit shall be checked by the Building Official. Such plans shall be reviewed by other departments of the County to check for compliance with laws and ordinances under their jurisdiction. If the work described in an application for permit, and the plans filed therewith, conform to the requirements of this code and other pertinent laws and ordinances, and the fee specified in Section 108 has been paid, the Building Official shall issue a permit therefore to the owner, payment for any permit fee shall be paid upon the issuance of such permit; provided, however, that no permit shall be granted for the moving of any building or structure or portion thereof which has deteriorated or been damaged to an extent greater than 50 percent of the cost of replacement (new) of such building or structure.

When the Building Official issues the permit, he shall affix an official stamp of approval to the specifications and each sheet of the Job Site Copy of the plans. Such approved plans and specifications shall not be changed, modified, or altered without authorization from the Building Official and other agencies granting approval, and all work shall be done in accordance with the approved plans. The building permit shall be posted in a conspicuous place on the site during the progress of work.

A fee of ten dollars (\$10.00) shall be imposed and collected for the reproduction of any building, electrical, plumbing or sign permit cards, for which a permit was issued by the Building Official.

**Solar Permits.** The issuance of the permit shall cover the building, electrical and plumbing code requirements pertinent to the solar energy systems and the scope of work for each specialty classification.

To whom permits may be issued to covering the scope of work for each specialty classification:

1. A homeowner complying with the provisions set forth in Chapter 444, HRS.
2. A person, firm, partnership, association or corporation holding a valid unexpired license and complying with the provisions set forth in Chapter 444, HRS for the scope of work covered by the permit.

The applicant shall provide the name of the licensed individual or firm will perform the incidental specialty work covered by Chapter 448E HRS.

**106.3 Retention of Plans.** One set of approved plans shall be retained by the Building Official as the official records, one set of approved plans shall be returned to the applicant as the approved Job Site Copy, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.

The official records under the jurisdiction of the Building Official shall be maintained as public records for the following:

1. Building, electrical, and plumbing permit applications for construction of all building and structure, which fall under this Code, shall be maintained for a period of seven (7) years.
2. Residential building plans for all residential building and structures within a residential area shall be maintained for a period of seven (7) years.
3. Commercial building plans for all commercial buildings within a commercial, industrial or resort area shall be maintained for a period of fifteen (15) years.

(19) Section 107 is deleted in its entirety.

(20) Section 108.1 is amended by adding an exception to the first paragraph as follows:

**108.1 Exception.**

1. County facilities, except for the Department of Water, are exempt.
2. Housing projects or portions of housing projects that are developed to be affordable to low-income household as determined by the Housing Director or his authorized representative of the County Housing Agency shall be exempt provided such projects conform to applicable provisions of the County's affordable housing program.
3. Housing projects or portions of housing projects that are developed to be affordable to gap-group household as determined by the Housing Director or his authorized representative of the County Housing Agency shall be exempt from one-half of the Building Permit fee, rounded off to the nearest dollar, provided such projects conform to applicable provisions of the County's affordable housing program.

(21) Section 108.2 is amended to read:

**108.2 Schedule of Permit Fees.** When permits are required, a fee for each permit shall be paid as required, in accordance to the schedule as established by the Building Official.

**108.2.1 Permit fees.** The fee for each permit shall be as set forth in Table 1-A.

(22) Section 108.3 is amended to read:

**108.3 Building Permits Valuations.** The Building Official shall make the determination of value or valuation under any provision of this code. The value to be used in computing the building permit and building plan review fees shall be the total value of all construction work for which the permit is issued, as well as all finish work, painting, roofing, electrical, plumbing, heating, air conditioning, elevators, fire extinguishing systems and any other permanent equipment. Final building permit valuation shall be set by the Building Official.

(23) Section 108.4 is amended to read:

**108.4 Investigation Fees: Work Without a Permit.**

**108.4.1 Investigation.** Whenever any work for which a permit is required by this code has been commenced without first obtaining said permit, a special investigation shall be made before a permit may be issued for such work.

**108.4.2 Fee.** An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then subsequently issued. The investigation fee shall be equal to the amount of the permit fee fixed by Table No. 1-A for such work. However, in all such cases, there shall be a minimum combined amount for investigation and permit fees of two hundred dollars (\$200.00) for any such work commenced without a permit.

In the event it is discovered by the Building Official that a required investigation fee was not collected, the Building Official shall not perform any additional inspection of the work until the required investigation fee has been paid.

The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this Code, nor from any penalty prescribed by law.

(24) Section 108.5 is amended to read:

**108.5 Building Plan Review Fees.** When a plan or other data is required to be submitted by Section 106 a plan review fee shall be paid at the time of submitting plans and specifications for review. Said plan review fee shall be fifteen (15) percent of the building fees established from Table No. 1-A rounded off to the nearest dollar, based upon a preliminary estimated valuation of work.

When the plan review is completed or when after the issuance of the building permit, new plans, revisions or other documents are submitted to require a new plan review, an additional plan review fee for each additional review shall be charged. The new plan review fee shall be equal to the original fee paid for the proposed project.

**Exception:**

1. The County of Kaua'i and its agencies and contractors, except for the Department of Water, thereof shall be exempt from the requirement of paying plan review fees.
2. Where a plan review fee has been paid, the plan review fee payment shall be deposited to the Plan Review, Permit Processing and Inspection Revolving Fund. Plan review fees are non-refundable.
  - (A) There is hereby established and created a fund to be known as the "Plan Review, Permit Processing and Inspection Revolving Fund." The fees collected pursuant to this subsection are hereby deemed appropriated upon receipt and may be expended for the hiring of persons employed on a fee, contract or piecework basis, or independent contractors to assist in plan checking, permit processing and inspections. The Budget Ordinance shall determine the

maximum number of persons that may be hired with these fees. The fee may also be expended for training, materials, supplies, and equipment that facilitate plan review, code enforcement, and for payment of overtime for plan checking, permit processing and inspections. At the end of the County's fiscal year, any fund balance in excess of \$200,000 in uncommitted funds shall be transferred and deposited into the General Fund.

**108.5.1 Expiration of Building Plan Review.** Applications for which plan review fees have been paid and for which no permit is issued within 365 days following the date of application shall expire by limitation, and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Building Official. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee.

Section 108.6 is amended to read:

**108.6 Fee Refunds.** The Building Official shall refund an amount equal to 50 percent of the permit fee paid under the provisions of Section 108 where a permittee, due to a material change in circumstances or financial difficulties, is unable to commence work authorized by the permit issued therefore. Provided that written application for refund shall be made on forms furnished by the Building Official no later than 15 days after the expiration date of such permit; and provided further that where the Building Official has extended the expiration date of the original permit pursuant to Section 105.5, application for refund shall be made not later than 15 days after the new expiration date.

Where more than one permit has been erroneously procured by the permittee and/or his agent for the same construction of work, the Building Official shall approve one permit and refund the total amount of fees paid for the other permits upon the surrender thereof; provided that no refund shall be made on any permit which has been surrendered after 180 days from the date of issuance of such permit, or where the amount to be refunded is less than twenty dollars (\$20.00).

Notwithstanding the foregoing provisions, no refund shall be made in any case where a new permit has been obtained under the provisions of Section 105.5, for recommencing the same work, or where the amount to be refunded is less than twenty dollars (\$20.00). All permits upon which refunds have been made in accordance with the foregoing shall thereafter be null and void.

- (25) Section 109.1 is amended by adding a second and third paragraphs to read:

Any inspections required of the Building Official shall be solely for the purpose of ascertaining compliance with the plans, specifications and code requirement as they relate to the structural integrity of the building and as they relate to health and safety. The inspections shall not be for the purpose of validating the workmanship of the building; such validation, if desired, shall be the responsibility of the building's owner and shall be done by a special inspector, hired and paid for by the builder, owner or respective party.

A survey of the lot may be required by the Building Official to verify that the structure is located in accordance with the approved plans.

- (26) Section 109.1.1 is added as follows:

**109.1.1 Inspection of Solar Installations.** Work for which a permit is required shall be subject for inspections by the Building Official, request for inspection shall be in accordance with the requirements set forth in this code. All inspection requests for incidental specialty work shall be requested by the licensed individual performing the work and in accordance with the requirements set forth in the Electrical or Plumbing Codes.

(27) Section 109.2 is deleted.

(28) Section 109.3 is amended to read:

**109.3 Required Inspections.** The Building Official, upon notification from the holder of the building permit or their duly authorized agent, shall make the following inspection and shall either approve that portion of the construction as completed or shall notify the holder of the building permit or duly authorized agent if the same fails to comply.

(29) Section 109.3.3 is amended to read:

**109.3.3 Flood Hazard Districts.** In hazardous area subject to flooding, a certification of finish floor elevation shall be submitted to the Building Division, Department of Public Works, in accordance to Chapter 15, Article 1, Floodplain Management, Kaua'i County Code 1987, as amended.

Prior to granting or upon receiving any inspectional approvals for inspections, the certification of finish floor elevation shall be submitted. The certification will assure the County that the finish floor elevation is in compliance.

(30) Section 109.3.6 is amended to read:

**109.3.6 Complete Load Path and Uplift Ties Inspection.** To be made after tie straps, approved framing anchors or mechanical fasteners are installed and prior to any concealment of sheathing.

(31) Section 109.3.7 is deleted.

(32) Section 109.3.8 is amended to read:

**109.3.8 Other inspections.** In addition to the inspections specified above, the Building Official is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of the code and other laws that are enforced by the code enforcement agency.

(33) Section 109.4 is amended to read:

**109.4 Reinspections.** A reinspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the building permit card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the Building Official.

To obtain reinspection, the applicant shall file an application thereof in writing on a form furnished by the Building Official and pay the reinspection fee of fifty dollars (\$50.00) for each additional inspection.

In an instance where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

(34) Section 109.5 is amended by adding a second and third paragraph to read:

The Building Official may require that every request for inspection be filed at least one working day before the day for which inspection is requested. The request may be communicated in writing or by telephone at the option of the Building Official.

The permittee may authorize representatives to undertake the management of notification for inspections. Duly authorized representatives shall be authorized in writing by the person granting authorization.

- (35) Section 110.1 is amended by adding an exception to read:

**Exception:**

1. Group U Occupancies.
2. The Building Official will have the discretion to issue a certificate of inspection in place of a certificate of occupancy.

- (36) Section 110.2 is amended to read.

**110.2 Certificate Issued.** After the Building Official inspects the building or structure and finds no violations of the provisions of the code or other laws that are enforced by the code enforcement agency, the Building Official shall issue a certificate of occupancy that contains the following:

1. The building permit number.
2. The address of the building or structure.
3. The name and address of the owner.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the building or structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. The name of the Building Official.

- (37) Section 110.5 is added to read:

**110.5 Certificate of Inspection.** Upon satisfactory completion of all building work in accordance with the provisions of this code and standards adopted, a certificate of inspection may be issued upon request.

- (38) Section 111 is deleted.

- (39) Section 112 is amended to read:

**SECTION 112 - BOARD OF APPEALS**

**112.1 Creation.** There shall be and is hereby created a Board of Appeals, hereinafter called the Board, consisting of seven members who shall be qualified by experience and training to pass upon matters pertaining to building construction and fire safety and who shall be appointed by the Mayor with the approval of the County Council. One member shall be currently registered as an engineer or architect with the State of Hawai'i Board of Registration of Professional Engineers, Architects, Land Surveyors and Landscape Architects. Two members shall be qualified by experience or training to pass upon matters pertaining to fire safety.

One member shall be qualified by experience and training to pass upon matters pertaining to electrical work. One member shall be qualified by experience and training to pass upon matters pertaining to

plumbing work. One member shall be qualified by experience and training to pass upon matters pertaining to building construction work. One member shall be from the public at large. The Board shall select a chairperson and vice chairperson annually.

**112.2 Term of Office.** The members of the Board of Appeals shall serve for staggered terms of three years and until their successors are appointed. However, no holdover term shall extend beyond ninety days.

**112.3 Limitation on Number of Terms.** No member of the Board of Appeals shall serve for more than two consecutive terms. Any partial term of more than two years shall be considered a term as used herein.

**112.4 Quorum.** A majority of the entire membership shall constitute a quorum and the affirmative vote of a majority of the entire membership shall be necessary to take any action.

**112.5 Powers and Duties.** The Board shall:

- (a) Hear and determine appeals from the decisions of the Building Official in the administration of the County of Kaua'i Building Code, Electrical Code, Sign Ordinance and Plumbing Code, involving any denial of the use of new or alternate materials, types of construction, equipment, devices or appliances.

In the case of any denial of the use of new or alternate materials, types of construction, equipment, devices, or appliances, an appeal may be sustained if the record shows:

- (I) that such new or alternate materials, types of construction, equipment, devices or appliances meet the required standards established by the Codes being appealed from;
  - (II) that permitting the use thereof will not jeopardize life, limb or property; and
  - (III) that such use will not be contrary to the intent and purpose of the Code being appealed from.
- In such appeals, the appellant shall pay all expenses necessary for tests, which may be ordered by the Board.

The Board may reverse, affirm or modify, wholly or partly, the decision appealed from.

- (b) Hear and determine appeals from the decision of the Fire Official in the administration of the County of Kaua'i Fire Code; and any denial in the use of new or alternate materials, types of construction, equipment, devices, or appliances.

The criteria for the use of new or alternate materials, types of construction, equipment, devices, or appliances shall be the same as for (a) above.

- (c) Hear and determine petitions for varying the application of the Building Code, Electrical Code, Sign Ordinance and Plumbing Code. A variance may be granted if the Board finds:
  - (I) that the strict application, operation or enforcement of the Code being appealed from would result in practical difficulty or unnecessary hardship;
  - (II) that safety to life, limb and property will not be jeopardized; and
  - (III) that the granting of variance would not be injurious to any adjoining lot and any building thereon, would not create additional fire hazards, and would not be contrary to the purpose of the Code and the public interest. In making its determination, the Board shall take into account the character, use and type of occupancy and construction of an adjoining lot and any building involved.

**112.6 Procedure.** The proceedings of the Board shall be subject to the provisions of Chapter 91, Hawai‘i Revised Statutes, as amended. The Board shall adopt rules and regulations for conducting its meetings, hearings, and investigations in conformity therewith and may impose fees to cover the costs of such proceedings.

(40) Section 113 is amended to read:

### **SECTION 113 - VIOLATIONS AND PENALTIES**

**113.1 Violations.** Whenever any building is being used or constructed contrary to the provisions of this code, the Building Official shall serve a notice to the party responsible for the violation to make the structure or portions thereof comply with the requirements of this Code.

#### **113.2 Penalties.**

- (a) General. It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy, or maintain any building or structure or cause or permit the same to be done in violation of this code.
- (b) Notice of Violation. Whenever any person, firm or corporation violates any provision of this code, the Building Official shall serve a notice of violation to the party responsible for the violation to make the building or structure or portion thereof comply with the requirements of this code. Such notice of violation shall include:

- (1) The date of the notice;
- (2) The name and address of the person noticed, and the location of the violation;
- (3) The section number of the ordinance, code or rule, which has been violated;
- (4) The nature of the violation; and
- (5) The deadline for compliance with the notice.

The notice of violation may be served in person or by registered or certified mail or in any other manner provided by law.

- (c) Criminal Prosecution.
  - (1) Any person, firm, or corporation violating any of the provisions of this code shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this code is committed, continued, or permitted, and upon conviction of any such violation such person shall be punishable by a fine of not more than \$2,000.00, or by imprisonment for not more than one year, or by both such fine and imprisonment.  
It shall be a misdemeanor for any person, firm or corporation as defined herein to knowingly allow or knowingly fail to prevent a violation of this code.
  - (2) Any officer, or authorized representative designated by the Building Official, may issue a summons or citation in accordance with the procedure specified in this Section. Nothing in this Section shall be construed as barring such authorized representative from initiating prosecution by warrant or such other judicial process as is permitted by statute or rule of court.
  - (3) Any authorized representative designated by the Building Official, upon making an arrest for a violation of the building code may take the name and address of the alleged violator



and shall issue to the violator in writing a summons or citation hereinafter described, requiring the violator to answer the complaint at a place and at a time provided in said summons or citation.

- (4) There shall be provided for use by authorized representative, a form of summons or citation for use in citing violators of the building code, which does not mandate the physical arrest of such violators. The form and content of such summons or citation shall be as adopted or prescribed by the administrative judge of the district court and shall be printed on a form commensurate with the form of other summonses or citations used in modern methods of criminal prosecution, so designed to include all necessary information to make the same valid within the laws and regulations of the State of Hawai'i and the County of Kaua'i.
  - (5) In every case when a citation is issued, the original of the same shall be given to the violator; if the administrative judge of the district court may prescribe that the violator be given a copy of the citation and provide for the disposition of the original and any other copies.
- (d) Administrative Enforcement. In lieu of or in addition to, pursuant to Section 113.2(c), if the Building Official determines that any person, firm, or corporation is not complying with a notice of violation, the Building Official may have the party responsible for the violation served, by mail or delivery, with an order pursuant to this Section.
- (1) Contents of the Order. The order may require the party responsible for the violation to do any or all of the following:
    - (A) Correct the violation within the time specified in the order;
    - (B) Pay a civil fine not to exceed \$1,000 in the manner, at the place and before the date specified in the order;
    - (C) Pay a civil fine not to exceed \$1,000 per day for each day in which the violation persists, in the manner and at the time and place specified in the order.
    - (D) The fine for each order shall be set forth in Table 1-B.
  - (2) The order shall advise the party responsible for the violation that the order shall become final 30 days after the date of its delivery. The order shall also advise that the Building Official's action may be appealed to the Board of Appeals.
  - (3) Effect of Order; Right to Appeal. The provisions of the order issued by the Building Official under this Section shall become final 30 calendar days after the date of the delivery of the order. The party responsible for the violation may appeal the order to the Board of Appeals as provided by Section 112 of this code. The appeal must be received in writing on or before the date the order becomes final. However, an appeal to the Board of Appeals shall not stay any provision of the order.
  - (4) Judicial Enforcement of Order. The Building Official may institute a civil action in any court of competent jurisdiction for the enforcement of any order issued pursuant to this Section. Where the civil action has been instituted to enforce the civil fine imposed by said order, the Building Official need only show that the notice of violation and order were served, that a civil fine was imposed; the amount of the civil fine imposed has not been paid; that either the order has not been appealed or that, if appealed, the order was sustained

by the Board of Appeals, and that the order or the Board of Appeals decision, as the case may be, was not clearly erroneous.

(41) Section 115 is amended to read:

#### **SECTION 115 - UNSAFE BUILDINGS**

**115.1 General.** All buildings or structures which are structurally unsafe or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety, health, or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, or abandonment, as specified in this code or any other effective ordinance are, for the purpose of this Section, unsafe buildings. All such unsafe buildings are hereby declared public nuisances and shall be abated by repair, rehabilitation, demolition, or removal in accordance with this Section.

**115.2 Notice to Owner.** The Building Official shall examine or cause to be examined every building or structure or portion thereof reported as dangerous or damaged and, if such is found to be an unsafe building as defined in this Section, the Building Official shall give to the owner of such building or a structure a written notice stating the defects thereof. This notice may require the owner or person in charge of the building or premises, within 60 days to secure all required permits, to commence either the required repairs or improvements or demolition and removal of the building or structure or portions thereof, and all such work shall be completed within 180 days from date of permit issuance, unless otherwise required by the Building Official. If necessary, such notice also shall require the building, structure or portion thereof to be vacated forthwith and not reoccupied until the required repairs and improvements are completed, inspected, and approved by the Building Official.

Any building or structure declared to be an unsafe building and constitute an immediate danger to the life, limb, property or safety of the public or occupants of such building, within 48 hours it shall be vacated, secured and maintained against any entry by the owner or person in charge of such building, structure or premises.

Proper service of such notice shall be by personal service, registered mail or certified mail upon the owner of record, provided, that if such notice is by registered mail or certified mail, the designated period within which said owner or person in charge is required to comply with the order of the Building Official shall begin as of the date he receives such notice.

**115.3 Posting of Signs.** The Building Official shall cause to be posted at each entrance to buildings ordered vacated a notice to read: DO NOT ENTER UNSAFE TO OCCUPY, BUILDING DIVISION, DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI. Such notice shall remain posted until the required repairs, demolition, or removals are completed. Such notice shall not be removed without written permission of the Building Official and no person shall enter the building except for the purpose of making the required repairs or of demolishing the building.

**115.4 Action Upon Noncompliance.** In case the owner shall fail, neglect, or refuse to comply with the notice to repair, rehabilitate, or to demolish and remove said building or structure or portion thereof, the Building Official may order the owner of the building prosecuted as a violator of the provisions of this code.

Nothing contained herein shall be construed to limit or restrict the Building Official from instituting, on behalf of the County any other legal or equitable proceedings, in addition to those specified herein, to obtain compliance with the notice to repair, rehabilitate, or to demolish and remove said building or

structure or portion thereof, and to recover the cost of such work from the owner or attach a lien to the property.

(42) Table 1-A is added to read:

**TABLE 1-A. BUILDING PERMIT FEES**

The fees for the issuance of building permits shall be computed in accordance with the following schedule:

<b>Total Estimated Valuation of Work</b>	<b>Fee to Be Charged</b>
\$1 to \$500	\$15.00
\$501 to \$2,000	\$15.00 for the first \$500.00 plus \$2.00 for each additional \$100.00 or fraction thereof, to and including \$2,000.00.
\$2,001 to \$25,000	\$45.00 for the first \$2,000.00 plus \$8.00 for each additional \$1,000.00 or fraction thereof, to and including \$25,000.00.
\$25,001 to \$50,000	\$229.00 for the first \$25,000.00 plus \$7.00 for each additional \$1,000.00 or fraction thereof, to and including \$50,000.00.
\$50,001 to \$100,000	\$404.00 for the first \$50,000.00 plus \$6.00 for each additional \$1,000.00 or fraction thereof, to and including \$100,000.00.
\$100,001 to \$1,000,000	\$704.00 for the first \$100,000.00 plus \$5.00 for each additional \$1,000.00 or fraction thereof, to and including \$1,000,000.00.
\$1,000,001 to \$25,000,000	\$5,204.00 for the first \$1,000,000.00 plus \$4.00 for each additional \$1,000.00 or fraction thereof to and including \$25,000,000.00.
\$25,000,001 to \$50,000,000	\$101,204.00 for the first \$25,000,000.00 plus \$3.00 for each additional \$1,000.00 or fraction thereof to and including \$50,000,000.00
\$50,000,000 & up	\$176,204 for the first \$50,000,000 plus \$2.00 for each additional \$1,000.00 or fraction thereof.

**Solar Energy System Fees.** A building plan review fee of fifteen (15) percent of the established building permit fee, rounded off to the nearest dollars, shall be paid at the time of submittal of plans and specifications for review. The permit fees for the issuance of a solar energy system permits which cover the building, electrical and plumbing code requirements shall be one hundred dollars (\$100.00) for one- and two-family dwellings and five hundred dollars (\$500.00) for all other buildings or structures.

(43) Table 1-B is added to read:

**TABLE 1-B. VIOLATIONS AND PENALTIES**

<b>VIOLATION</b>	<b>NO. OF DAYS TO CORRECT VIOLATION</b>	<b>AMOUNT OF INITIAL FINE</b>	<b>NO. OF DAYS AFTER NOTICE OR ORDER BEFORE DAILY FINES ARE TO BE ASSESSED</b>	<b>AMOUNT OF DAILY FINES</b>
1.a. Building w/o a building permit b. Occupying the building w/o a certificate of occupancy	30 30	Footnote 1 Footnote 1	30 0	Footnote 1 Footnote 1

c. Demolition w/o a building permit	30	Footnote 1	30	Footnote 1
d. Relocation of a building w/o a relocation permit	30	Footnote 1	30	Footnote 1
2. Not complying with stop work order	Immediately	Footnote 1	0	Footnote 1
3. Change in use of the building or space w/o a building permit and/or certificate of occupancy	30	100	30	100
4. Construction not following approved plans	30	100	30	100
5. Safety hazards; examples: exits, hazardous occupancies, fire alarm, fire sprinkler, standpipe system, protection of pedestrians during construction or demolition, safety glazing, barb wire, swimming pool enclosure, etc.	Immediately	100	0	100
6. Unsafe buildings IBC Section 115				
a. Repairs/demolition	30	50	30	50
b. Hazardous condition	10	100	30	100
7. Building code violations with a building permit				
a. Minor violation	30	100		100
b. Major violation	30	200		200
8. Recurring violation	3	Double of previous fees up to \$2,000	30	Double of previous fees up to \$2,000
Footnote 1. Base on total estimated valuation rounded to the nearest dollar:				
Up to \$ 99,999		100		100
100,000—499,999		200		200
500,000—999,999		300		300
1,000,000—9,999,999		500		500
10,000,000—24,999,999		700		700
25,000,000—49,999,999		1000		1000
50,000,000—99,999,999		1500		1500
100,000,000 and over		2000		2000

(44) Section 202 is amended to read:

The following paragraph added before the definition of “ATRIUM”:

ASSISTANTS. When the term “assistants” is used in this code, it shall be construed to mean the authorized representatives of the Building Official.

The following paragraph added before the definition of “AUTOMATIC”:

AUTHORIZED REPRESENTATIVES. When the term “Authorized Representatives” is used in this code, it shall be construed to mean all building plan examiners, building inspectors and their supervisors designated as subordinate officers to the Building Official in enforcement of this code.

The definition of “BUILDING” amended to read:

BUILDING. A building is any structure used or intended for supporting any use or occupancy. The term shall include but not be limited to any structure mounted on wheels such as a trailer, wagon or vehicle which is parked and stationary for any 24-hour period, and is used for business

or living purposes; provided however that the term shall not include a push cart or push wagon which is readily movable and which does not exceed 25 square feet in area, nor shall the term include a recreational trailer or trailer or vehicle, used exclusively for the purpose of selling any commercial product there from, which holds a vehicle license and actually travels on public or private streets.

The following paragraph added before the definition of “BUILDING, ENCLOSED”:

BUILDING, EXISTING, is a building for which a legal building permit has been issued, or one which complied with the Building Code in effect at the time the building was erected.

The definition of “BUILDING OFFICIAL” amended to read:

BUILDING OFFICIAL shall mean the County Engineer or his authorized representative.

The following paragraphs added before the definition of “CAST STONE”:

CARPORT is a private garage, which is at least 100 percent open on one side and with 50 percent net openings on another side or which is provided with an equivalent of such openings on two or more sides.

A private garage which is 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the Building Official.

The following paragraphs added before the definition of “COURT”:

COUNTY shall mean the County of Kaua‘i.

COUNTY COUNCIL shall mean the Council of the County of Kaua‘i.

The following paragraphs added after the definition of “FIRE BARRIER”:

FIRE CHIEF and FIRE OFFICIAL may be used synonymously and shall mean the Chief of the Fire Department of this County or his regularly authorized representative.

FIRE CODE is the Fire Code of the County of Kaua‘i.

The definition of “HISTORICAL BUILDING” amended to read:

HISTORICAL BUILDINGS are buildings or structures officially listed on the State of Hawai‘i or National Register of Historic Places.

The definition of “PERSON” amended to read:

PERSON. Any individual, firm, partnership, association, corporation or utility company shall include each and every owner of any whole or fractional interest in the property concerned, whether in fee, any lesser freehold or tenancy at will.

SOLAR ENERGY COLLECTORS. A collecting device or array panel used to absorb energy from the sun.

SOLAR ENERGY SYSTEM. Any configuration of equipment and components used to collect, convey, store and convert the sun’s energy for a purpose.

SOLAR PHOTOVOLTAIC POWER SYSTEM. All components and subsystems that, in combination, collect, convey, store and convert the sun’s energy into electrical energy suitable for connection to a utilization load.

SOLAR WATER HEATING SYSTEM. Any configuration of equipment and components assembled to collect, convey, store and convert the sun's energy primarily to supply hot water.

The following paragraph added after the definition "START OF CONSTRUCTION":

STATE shall mean the State of Hawai'i.

(45) Section 308.2 is amended to read:

**308.2 Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services in an assisted living facility. The residents participate in fire drills, are self starting, and may require some physical assistance from up to one staff to reach a point of safety in an emergency situation. Facilities with residents who require assistance by more than one staff, are not self-starting, are bedridden beyond 14 days, or require intermittent nursing care beyond 45 days, shall reside on the first floor in all Type III, IV, and V construction, or shall be classified as Group I-2.

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

(46) Section 308.3 is amended to read:

**308.3 Group I-2.** This occupancy shall include buildings and structures used for personal, medical, surgical, psychiatric, nursing, or custodial care on a 24-hour basis of more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Hospitals
- Nursing homes (both intermediate-care facilities and skilled nursing facilities)
- Mental hospitals
- Detoxification facilities
- Specialized Alzheimer's facilities or areas
- Assisted living facilities (with residents beyond group I-1 limitations for capability)

A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

(47) Section 310.1 is amended to read:

**310.1 Residential Group R.** Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I. Residential occupancies shall include the following:

R-1 Residential occupancies where the occupants are primarily transient in nature, including:

- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, and facilities providing personal care services that have residents that are capable of self-evacuation in an emergency situation, including:

- Apartment houses
- Boarding houses (not transient)
- Convents
- Dormitories
- Facilities providing personal care services (with residents that are capable of self-evacuation)
- Fraternities and sororities
- Hotels (nontransient)
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

Facilities providing personal care services with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I including:

- Buildings that do not contain more than two dwelling units
- Adult facilities that provide accommodations for five or fewer persons of any age for less than 24 hours
- Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours
- Congregate living facilities with 16 or fewer persons

Adult and child care facilities that are within a single-family home are permitted to comply with the International Residential Code in accordance with Section 101.2.

R-4 Residential occupancies shall include buildings, arranged for occupancy as assisted living facilities including more than five but not more than 16 occupants, excluding staff. Residents shall meet the ability to evacuate requirements and other limitations as required in Group I-1.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code, or shall comply with the International Residential Code.

(48) Section 310.2 is amended to read:

The definition of “Personal Care Service” is amended to read:

**PERSONAL CARE SERVICE.** The care of residents who do not require chronic or convalescent, health, medical or nursing care. Personal care involves responsibility for the safety of the resident while inside the building. The types of facilities providing personal care services shall include, but not be limited to, the following: assisted living facilities, residential care facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

The definition of “assisted living facilities” is amended to read:

ASSISTED LIVING FACILITIES. A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services and are licensed by the State.

- (49) Section 402.17 is added to read:

**402.17 Fire Alarm System.** Fire alarm systems shall comply with the Fire Code.

- (50) Section 403.8 is amended to read:

**403.8 Fire command station.** Fire command stations shall comply with the Fire Code and be approved by the fire chief.

- (51) Section 420 is added to read:

#### **SECTION 420 - FENCES**

**420.1 General.** Fences within required yard space shall be constructed in accordance with Chapter 8, Comprehensive Zoning Ordinance; Chapter 15, Article 1 Floodplain Management and Chapter 16, Traffic Code, Kaua‘i County Code, 1987, as amended. In areas where fence height is not regulated by the Comprehensive Zoning Ordinance, fences over 6 feet in height will be subject to approval of the Fire Department as to access.

**420.2 Barbed or Razor Wire Fences.** Barbed or razor wire shall not be used for the construction of any fence.

#### **Exception:**

1. Barbed or razor wire may be used in fences enclosing the following premises, if barbed or razor wire shall be placed along or above the height of 6 feet from the ground, subject to the approval of the Fire Department.
  - 1.1. Any “public utility” as defined in Section 269-1, Hawai‘i Revised Statutes.
  - 1.2. Premises zoned industrial and used for storage or handling of hazardous materials.
  - 1.3. Zoos for keeping animals and birds for public view or exhibition.
  - 1.4. Jails, prisons, reformatories, and other institutions, which are involved in law enforcement or military activities where security against entry is an important factor.
2. For premises located in open and agriculture-zoned districts, as defined by the Comprehensive Zoning Ordinance, barbed wire may be used in fences enclosing premises used for pasturing farm animals.

**420.3 Construction Barrier.** For fences allowed during construction or demolition, see Chapter 3303.

**420.4 Electric Wired Fence.** Installation of electrically charged wire fences shall conform to Chapter 142, Part III, Section 142-61 of the Hawai‘i Revised Statutes, as amended.

- (52) Section 501.2 is amended to read:

**501.2 Premises Identification.** Numbers shall be provided for all new buildings as specified in Chapter 15, Article 4, KCC 1987, Numbering of Houses in portions of the County of Kaua‘i.

- (53) Section 903.2.5 is amended to read:

**903.2.5 Group I.** An automatic sprinkler system shall be provided throughout buildings with Group I fire area.



(54) Section 903.2.7 is amended to read:

**903.2.7 Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

**Exception:** R-3 residential occupancies.

(55) Section 911.1 is amended to read:

**911.1 Features.** Where required by other sections of this code, a fire command center for fire department operations shall be provided and shall comply with the fire code and be approved by the fire chief.

(56) Section 1008.2 is amended to read:

**1008.2 Gates.** Gates serving the means of egress system shall comply with the requirements of this Section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

**Exceptions:**

1. Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.
2. Security gates may be permitted across corridors or passageways in school buildings if there is a readily visible durable sign on or adjacent to the gate, stating: THIS GATE IS TO REMAIN SECURED IN THE OPEN POSITION WHENEVER THIS BUILDING IS IN USE. The sign shall be in letters not less than one inch high on a contrasting background. The use of this exception may be revoked by the Building Official for due cause.

(57) Section 1026.1 is amended by adding Exception 8 to read:

8. Glass jalousie bladed windows may be used for emergency escape or rescue.

(58) Entire Chapter 11 is amended to read:

**Chapter 11 - ACCESSIBILITY**

**SECTION 1101 - GENERAL**

**1101.1 Scope.** Buildings or portions of buildings shall be accessible to persons with disabilities in accordance with the following regulations. These regulations will be administered and enforced by said agencies.

1. Construction of buildings or facilities of the State or County Governments, Architectural Access Committee, HRS 103-50, administered by the Disability and Communication Access Board, State of Hawai'i.
2. Americans with Disabilities Act, administered and enforced by the U.S. Department of Justice.
3. The Fair Housing Act, administered and enforced by the U.S. Department of Housing and Urban Development.
4. Other pertinent laws relating with disabilities shall be administered and enforced by agencies responsible for their enforcement.

Prior to the issuance of a building permit, the owner (or the owner's representative, professional architect, or engineer), shall submit a statement that all requirements, relating to accessibility for persons with disabilities, shall be complied with.

- (59) Section 1203.2.2 is added to read:

**1203.2.2 Unvented attic spaces.** The attic space shall be permitted to be unvented when the design professional determines it would be beneficial to eliminate ventilation openings to reduce salt-laden air and maintain relative humidity 60 percent or lower to:

1. Avoid corrosion to steel components;
2. Avoid moisture condensation in the attic space; or
3. Minimize energy consumption for air conditioning or ventilation by maintaining satisfactory spaces conditions in both the attic and occupied space below.

- (60) Section 1203.3.2 is amended by replacing the International Energy Conservation Code in number 4 with Article 6, Chapter 12 Building Code, KCC 1987, Ordinance 890, as amended.

- (61) Section 1207 is deleted.

- (62) Chapter 13 is amended to read:

### **CHAPTER 13 - SOLAR ENERGY SYSTEMS**

**1301.1 Purpose.** The purpose is to regulate the design and construction on the envelopes and selection of heating, service water heating, electrical distribution and equipment required for the purpose of effective conservation of energy within a building or structure governed by this code.

**Exception:** For one- and two-family dwellings solar energy systems see Chapter 23 of the International Residential Code.

**1301.2 Solar Energy Collectors.** Collectors that function as building components shall comply with the applicable provisions of the code. Collectors located above or upon a roof and functioning as building components shall not reduce the required fire-resistance or fire-retardancy classification of the roofing-materials.

- (63) Section 1403.2 is amended by deleting the last sentence in the first paragraph.

- (64) Section 1405.10.4 is amended by deleting the word "ICC."

- (65) Section 1505.1 is amended by adding a second exception to read:

**Exception:** Aluminum roofing shall be approved as Class B roofing, providing that an automatic sprinkler is installed throughout the building.

- (66) Section 1509.6 is added to read:

**1509.6 Roof-mounted solar PV systems—Other than residential buildings.** Access to systems for occupancies other than one- and two-family dwellings shall be provided in accordance with Sections M2301.1.1 through M2301.2.1.5.

**Exception:** Where it is determined by the fire code official that the roof configuration is similar to that of a one- or two-family dwelling, the residential access and ventilation requirements in Sections 1301.2.1.1 through 1301.2.1.4 shall be permitted to be used.

**1509.6.1 Access.** There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

**Exception:** Where either axis of the building is 250 feet (76,200 mm) or less, there shall be a minimum 4-foot-wide (1290 mm) clear perimeter around the edges of the roof.

**1509.6.2 Pathways.** The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of fire fighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.
3. Shall be a straight line no less than 4 feet (1290 mm) clear to skylights or ventilation hatches.
4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.
5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

**1509.6.3 Smoke ventilation.** The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45,720 mm) by 150 feet (45,720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:
  - 2.1. A pathway 8 feet (2438 mm) or greater in width.
  - 2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents.
  - 2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) “venting cutouts” every 20 feet (6096 mm) on alternating sides of the pathway.

(67) Section 1603.3 is amended to read:

**1603.3 Live loads posted.** Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 100 psf (4.80 kN/m<sup>2</sup>), such design live loads shall be conspicuously posted by the owner in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

(68) Section 1612.3 is amended to read:

**1612.3 Flood hazard areas.** See Chapter 15, Article 1, Floodplain Management, K.C.C. 1987, as amended.

(69) Section 1612.4 is amended to read:

**1612.4 Design and construction.** See Chapter 15, Article 1, Floodplain Management, K.C.C. 1987, as amended.

(70) Section 1612.5 is deleted.

(71) Table 1613.5.6(1) is amended to read:

**Table 1613.5.6(1)**  
**Seismic Design Category Based On Short-Period Response Acceleration**

Value of $S_{DS}$	Occupancy Category		
	I or II	III	IV

$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50 \leq S_{DS} < 0.60g$	C	D	D
$0.60g \leq S_{DS}$	D	D	D

(72) Table 1613.5.6(2) is amended to read as follows:

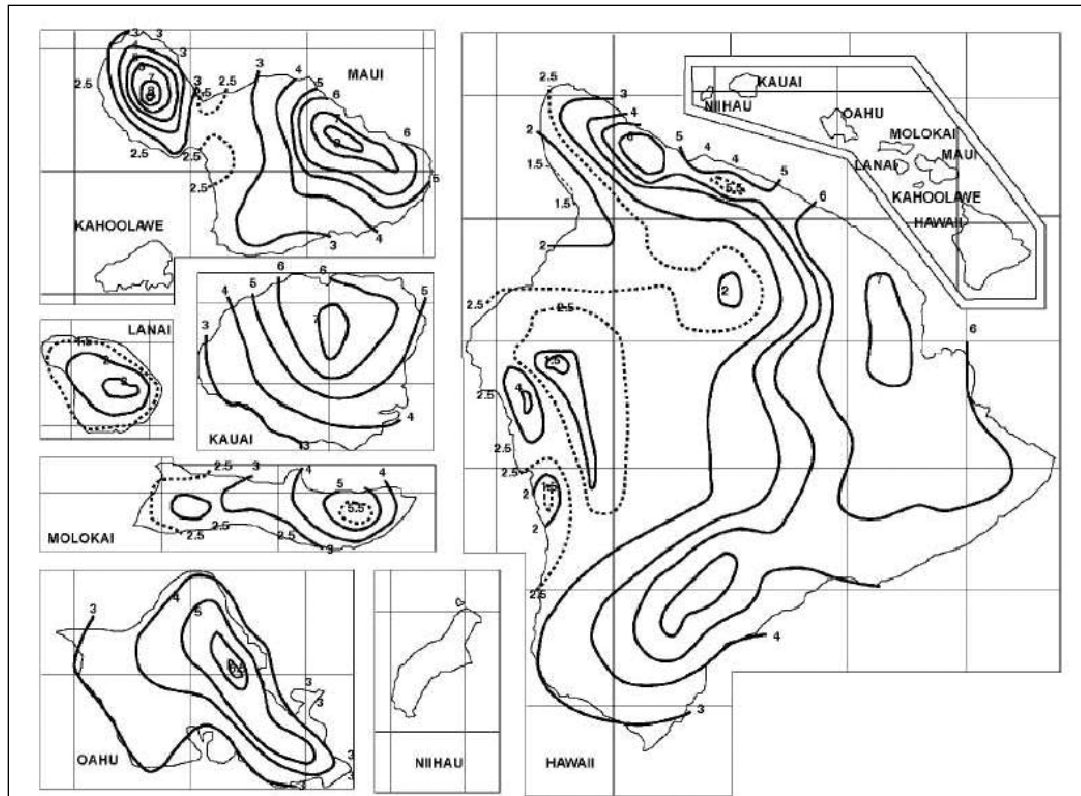
**Table 1613.5.6(2)**

**Seismic Design Category Based On 1-Second Period Response Acceleration**

Value of $S_{DI}$	Occupancy Category		
	I or II	III	IV
$S_{DI} < 0.067g$	A	A	A
$0.067g \leq S_{DI} < 0.133g$	B	B	C
$0.133g \leq S_{DI} < 0.20g$	C	C	D
$0.20g \leq S_{DI} < 0.25g$	C	D	D
$0.25g \leq S_{DI}$	D	D	D

(73) Section 1611.1 is amended to read:

**1611.1 Design rain loads.** Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow. The design rainfall rate shall be based on the 100-year 1-hour rainfall rate indicated in Figure 1611.1 as published by the National Weather Service or on other rainfall rates determined from approved local weather data.



**Figure 1611.1**

100-Year, 1-Hour Rainfall (inches) Hawai'i

Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.

(74) Section 1702 is amended to read:

The definition of "structural observation" is amended to read:

**STRUCTURAL OBSERVATION.** Structural observation is as defined in Chapter 16-115, Hawai'i Administrative Rules, implementing Chapter 464, Hawai'i Revised Statutes. Structural observation does not include or waive the responsibility for the inspection required by Section 109, 1704 or other sections of this code.

(75) Section 1704 is amended to read:

**1704.1 General.** Where application is made for construction as described in this Section, the owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Sections 1704 and 1707. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation requiring special inspection. These inspections are in addition to the inspections specified in Section 109.

**Exceptions:**

1. Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the Building Official.

2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.
3. Unless otherwise required by the Building Official, special inspections are not required for occupancies in Group R-3 as applicable in Section 101.2 and occupancies in Group U that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.
4. The employment of a special inspector shall not be required for the construction work for any government agency that provides for its own inspections.

With the approval of the Building Official, the following may qualify and perform as special inspectors:

1. An architect or engineer licensed and registered in the State of Hawai‘i and performing inspection in the branches of engineering in which he is registered.
2. A person certified by the International Code Council in the branches of special inspection in which he is registered.
3. A person certified by the Special Inspection Program administered by the City and County of Honolulu, may perform special inspection in the branches of inspection in which he is registered.

**1704.1.1 Statement of special inspections.** The construction drawings shall include a complete list of special inspections required in Sections 704, 1707 and 1708. The permit applicant shall submit a statement of special inspections prepared by the registered licensed engineer or architect of record as a condition for permit issuance. The statement shall include a complete list of special inspections required by this Section and the qualified person who will conduct the special inspection.

**1704.1.2 Report requirement.** Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the owner and licensed engineer or architect of record. Reports shall indicate that work inspected was done in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the licensed engineer or architect of record and to the Building Official. The special inspector shall submit a final signed report to the owner and licensed engineer or architect of record, stating whether the work requiring special inspection was, to the best of the inspector’s knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code. Prior to the final inspection required under Section 109.3.10, the licensed engineer or architect of record shall submit a written statement verifying receipt of the final special inspection reports and documenting that there are no known unresolved code requirements that create significant public safety deficiencies.

(76) Section 1705 is deleted in its entirety.

(77) Section 1709 is amended to read:

**1709 Structural observations.** Structural observations shall be performed in accordance with Section 464-5, Hawai‘i Revised Statutes, administered and enforced by the Department of Commerce and Consumer Affairs.

(78) Section 1801.1 is amended by adding a second paragraph to read as follows:

All requirements for excavation, grading and earthwork construction including fills and embankment shall comply to Article 7, Chapter 22, Kaua‘i County Code-1987, as amended, an Article regulating

and controlling grading, grubbing, stock piling, and soil erosion and sedimentation within the County of Kaua'i.

(79) Section 1808.2.7 is amended to read:

**1808.2.7 Splices.** Splices shall be constructed so as to provide and maintain true alignment and position of the component parts of the pier or pile during installation and subsequent thereto and shall be of adequate strength to transmit the vertical and lateral loads and moments occurring at the location of the splice during driving and under service loading. Splices occurring in the upper 10 feet (3048 mm) of the embedded portion of the pier or pile shall be capable of resisting at allowable working stresses the moment and shear that would result from an assumed eccentricity of the pier or pile load of 3 inches (76 mm), or the pier or pile shall be braced in accordance with Section 1808.2.5 to other piers or piles that do not have splices in the upper 10 feet (3048 mm) of embedment.

(80) Section 2104.1.9 is added to read:

**2104.1.9 Cleanouts.** Cleanouts shall be provided for all grout pours over 5 feet 4 inches in height. Special provisions shall be made to keep the bottom and sides of the grout spaces, as well as the minimum total clear area required by ACI 530.1-05/ASCE 6-05/TMS 602-05 clean and clear prior to grouting.

**Exception:** Cleanouts are not required for grout pours 8 feet or less in height providing all of the following conditions are met:

1. The hollow masonry unit is 8-inch nominal width or greater with specified compressive strength  $f_m$  less than or equal to 1,500 psi;
2. Fine grout is used complying with ASTM C-476 minimum compressive strength of 2,500 psi; and
3. Special Inspection is provided.

(81) Section 2302.1 is amended by adding an exception to the definition of NATURALLY DURABLE WOOD to read:

**Exception:** The Building Official may authorize the use of other species heartwood provided the wood has demonstrated and have sufficient testing evidence, or proof to substantiate any claims that may be made regarding its use. Authorized heartwood species shall be naturally resistive to decay and termites.

When other heartwood species has been authorized to be use, these heartwood species shall require the seal of a duly licensed professional registered structural engineer or architect as required by Chapter 464 of the Hawai'i Revised Statutes as amended, to comply with other provisions of this code.

(82) Section 2303.1.8 is amended to read:

**2303.1.8 Preservative-treated wood.** Structural lumber, including plywood, posts, beams, rafters, joists, trusses, studs, plates, sills, sleepers, roof and floor sheathing, flooring and headers of new wood-frame buildings and additions shall be:

1. Treated in accordance with AWPAs Standard U1 (UC1 thru UC4B) for AWPAs Standardized Preservatives, all marked or branded and monitored by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met.

2. For SBX disodium octaborate tetrahydrate (DOT), retention shall be not less than 0.28 pcf  $B_2O_3$  (0.42 pcf DOT) for exposure to Formosan termites. All such lumber shall be protected from direct weather exposure as directed in AWPAC UC1 and UC2.
3. For structural glue-laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPAC U1 (UC1 thru UC4B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the Building Official. Water based treatment processes as listed in paragraphs 1 and 2 are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values and permitted by the product manufacturer.
4. For structural composite wood products, treated by non-pressure processes in accordance with AWPAC Standard U1 (UC1, UC2 and UC3A) or approved by the Building Official.

**2303.1.8.1 Treatment.** Wood treatment shall include the following:

1. A quality control and inspection program which meets or exceeds the current requirements of AWPAC Standards M2-01 and M3-03;
2. Inspection and testing for the treatment standards as adopted by this code shall be by an independent agency approved by the Building Official, accredited by the American Lumber Standards Committee (ALSC) and contracted by the treating company;
3. Field protection of all cut surfaces with a preservative, which shall be applied in accordance with AWPAC Standard M-4-02 or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

**2303.1.8.2 Labeling.** Labeling shall be applied to all structural lumber 2 inches or greater nominal thickness, with the following information provided on each piece as a permanent ink stamp on one face or on a durable tag permanently fastened to ends with the following information:

1. Name of treating facility;
2. Type of preservative;
3. AWPAC use category;
4. Quality mark of third party inspection agency;
5. Year of treatment.

All lumber less than 2 inches in nominal thickness, shall be identified per bundle by means of a label consisting of the above requirements. Labels measuring no less than 6 inches by 8 inches shall be placed on the lower left corner of the strapped bundle.

**2303.1.8.3 Moisture content of treated wood.** When wood pressure treated with a water-borne preservative is used in enclosed locations where drying in service cannot readily occur, such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

(83) Section 2304.9.5 is amended to read:

**2304.9.5 Fasteners in non-borate-preservative-treated and fire-retardant-treated wood.** Fasteners for preservative-treated and fire-retardant-treated wood, other than Borate (SBX, ZB) or LOSP treatments as approved in Section 2303.1.8 Preservative-treated wood, shall be of hot dipped zinc-



coated galvanized steel, stainless steel, silicone bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153.

**Exception:** Fasteners other than nails, timber rivets, wood screws and lag screws shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum.

Fastenings for wood foundations shall be as required in AF&PA Technical Report No. 7.

(84) Section 2304.11 is amended to read:

**2304.11 Protection against decay and termites.**

**2304.11.1 General.** Where required by this Section, protection from decay and termites shall be provided by the use of naturally durable or preservative-treated wood.

**2304.11.2 Wood used above ground.** Structural lumber installed above ground shall be preservative-treated wood in accordance with Section 2303.1.8.

**2304.11.2.1 Soil treatment and termite barriers.** Where structural lumber of wood frame buildings or structures are supported directly on the ground by a concrete slab, or concrete and/or masonry foundation, Formosan subterranean termite protection shall be provided by either chemically treating the soil beneath and adjacent to the building or structure by a Hawai'i-licensed pest control operator, or stainless steel termite barrier, or other termite protection measures approved by the Building Official.

All soil treatment, stainless steel termite barrier, and termite protection measures shall be installed according to manufacturer's recommendations for control of Formosan subterranean termites.

**2304.11.3 Wood in ground contact.** Wood supporting permanent buildings and structures, which is in direct soil contact or is embedded in concrete or masonry in direct contact with earth shall be treated to the appropriate commodity specification of AWP Standard U1.

Wood in direct soil contact but not supporting any permanent buildings or structures shall be treated to the appropriate commodity specification of AWP Standard U1 for ground contact.

**2304.11.4 Retaining walls.** Wood in retaining or crib wall shall be treated to AWP Standard U1.

**2304.11.5 Wood and earth separation.** Where wood is used with less than 6-inch vertical separation from earth (finish grade), the wood shall be treated for ground-contact use.

Where planter boxes are installed adjacent to wood frame walls, a 2-inch-wide (51 mm) air space shall be provided between the planter and the wall. Flashings shall be installed when the air space is less than 6 inches (152 mm) in width. Where flashing is used, provisions shall be made to permit circulation of air in the air space. The wood-frame wall shall be provided with an exterior wall covering conforming to the provisions of Section 2304.6.

**2304.11.6 Under-floor clearance for access and inspection.** Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches; the minimum clearance between the bottom of girders and the ground beneath shall be 18 inches.

**Exception:** Open slat wood decks shall have ground clearance of at least 6 inches for any wood member.

Accessible under-floor areas shall be provided with a minimum 18 inch-by 24 inch access opening, effectively screened or covered. Pipes, ducts and other construction shall not interfere with the accessibility to or within under-floor areas.

**2304.11.7 Wood used in retaining walls and cribs.** Wood installed in retaining or crib walls shall be preservative treated in accordance with AWP A U1 (Commodity Specifications A or F) for soil and fresh water use.

**2304.11.8 Weather exposure.** All portions of timbers (over 5-inch nominal width) and glued-laminated timbers that form structural supports of a building or other structure shall be protected by a roof, eave, overhangs, flashings, or similar coverings.

All wood or wood composite panels, in weather-exposed applications, shall be of exterior type.

**2304.11.9 Water splash.** Where wood-frame walls and partitions are covered on the interior with plaster, tile or similar materials and are subject to water splash, the framing shall be protected with approved waterproof paper conforming to Section 1404.2.

**2304.11.10 Pipe and other penetrations.** Insulations around plumbing pipes shall not pass through ground floor slabs. Openings around pipes or similar penetrations in a concrete or masonry slab, which is in direct contact with earth, shall be filled with non-shrink grout, BTB, or other approved physical barrier.

(85) Section 2308.1 is amended to read:

**2308.1 General.** The requirements of this Section are intended for conventional light-frame construction. Other methods are permitted to be used, provided a satisfactory design is submitted showing compliance with other provisions of this code. Interior nonload-bearing partitions, ceilings and curtain walls of conventional light-frame construction are not subject to the limitations of this Section. Alternatively, compliance with AF&PA WFCM shall be permitted subject to the limitations therein and the limitations of this code.

(86) Section 2701.1 is amended to read:

**2701.1 Scope.** This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of the National Electrical Code, NFPA 70.

(87) Section 3001.1 is amended to read:

**3001.1 Scope.** This chapter shall be a guideline and governs the design, construction, installation, alteration, and repair of elevators and conveying systems and their components. If this Chapter conflicts with another applicable law of the jurisdiction, then said applicable law shall prevail over this Chapter.

(88) Section 3107.1 is amended to read:

**3107.1 General.** Signs shall be designed, constructed and maintained in accordance with Outdoor Sign Ordinance, Chapter 15, Article 4, Kaua'i County Code 1987, as amended.

(89) Section 3109.3 is amended to read:

**3109.3 Public swimming pools.** Public swimming pools shall be completely enclosed by a fence at least 4 feet (1290 mm) in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch-diameter (102 mm) sphere. The fence or screen enclosure shall be equipped with self-closing and self-latching gates.

**Exception:** Swimming, dipping, or wading pools located on the premises of a hotel are not required to be enclosed.

- (90) Section 3403.1.1 is amended to read:

**Exception:** For building and structures in flood hazard areas, see Chapter 15, Article 1 Floodplain Management, Kaua‘i County Code 1987, as amended.

- (91) Section 3405.1 is amended to read:

**3405.1 Conformance.** The installation or replacement of glass shall be as required by Chapter 24 for new installations.

- (92) Section 3407.2 is amended to read:

**3407.2 Flood Hazard Areas.** For building and structures in flood hazard areas, see Chapter 15, Article 1 Floodplain Management, Kaua‘i County Code 1987, as amended.

- (93) Section 3409 is amended to read:

**SECTION 3409 - ACCESSIBILITY FOR EXISTING BUILDINGS**

**3409.1** This Section applies to the maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

Conformance to all of the design and construction requirements for persons with disabilities shall comply with the requirements set forth in Chapter 11, Accessibility, of this Code as amended.

- (94) Section 3410.2 is amended by deleting the phrase “DATE TO BE INSERTED BY THE JURISDICTION. NOTE IT IS RECOMMENDED THAT THE DATE COINCIDE WITH THE EFFECTIVE DATE OF BUILDING CODE WITHIN THE JURISDICTION” and replacing with “the building code adopted, approved and now have the effect of law as Ordinance.”

- (95) Section 3410.3.2 is amended to read:

**3410.3.2 Compliance with other codes.** Buildings that are evaluated in accordance with this Section shall comply with the Kaua‘i County Fire Code.

- (96) Appendix U is added to read:

## APPENDIX U

### Hawai'i Hurricane Sheltering Provisions for New Construction

**Section U101 Community storm shelters.** Chapter 4 is amended by adding Section 421 to read as follows:

#### SECTION 421 Community storm shelters

**421.1 General.** In addition to other applicable requirements in this code, community storm shelters and the following specific Occupancy Category IV buildings shall be constructed in accordance with ICC/NSSA-500:

1. Designated earthquake, hurricane or other emergency shelters.
2. Designated emergency preparedness, communication, and operation centers and other facilities required for emergency response.

**421.1.1 Scope.** This appendix applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as hurricanes. Such structures shall be designated to be hurricane shelters.

**421.2 Definitions.** The following words and terms shall, for the purposes of this Chapter and as used elsewhere in this code, have the meanings shown herein.

**COMMUNITY STORM SHELTER.** A building, structure, or portion thereof, constructed in accordance with ICC 500-08 ICC/NSSA Standard on the Design and Construction of Storm Shelters and designated for use during a severe wind storm event such as a hurricane.

**Section U102 Hawai'i residential safe room.** Chapter 4 is amended by adding Section 422 to read as follows:

#### SECTION 422 Hawai'i residential safe room

**422.1 Performance-based design criteria.** The residential safe room shall meet the minimum performance specifications of Sections 422.1.1 through 422.9.

**422.1.1 Intent and scope.** The intent of the residential safe room is to temporarily provide an enhanced protection area, fully enclosed within a dwelling or within an accessory structure to a residence, which is designed and constructed to withstand the wind pressures, windborne debris impacts, and other requirements of this Section.

##### 422.1.2 Alternative standards.

1. Manufactured safe room designs subject to approval. A manufactured safe room or safe room kit may be substituted if documentation is submitted and approved by the Building Official. The safe room shall be engineered, tested, and manufactured to meet or exceed the criteria of this Section.
2. FEMA in-residence shelter designs permitted. It shall be permissible to build FEMA In-Residence Shelters of up to 64 square feet of floor area with walls up to 8 feet long that are built in accordance with construction details of FEMA 320.

**422.2 Site criteria.** Residential safe rooms shall not be constructed within areas subject to stream flooding, coastal flooding or dam failure inundation within any of the following areas:

1. FEMA Special Flood Hazard Areas (SFHA) subject to rainfall runoff flooding or stream or flash flooding;

2. Coastal zones “V” or “A” identified in the Flood Insurance Rate Map (FIRM) issued by FEMA for floodplain management purposes, in which the flood hazard are tides, storm surge, waves, tsunamis, or a combination of these hazards;
3. Areas subject to dam failure inundation as determined by the Department of Land and Natural Resources.

**422.3 Maximum occupancy.** The safe room is permitted to be used for a maximum occupancy based on at least 15 square feet per person with a maximum of 8 persons in a room of up to 128 square feet of floor area.

**422.4 Provisions for exiting.** The room shall be equipped with an inward-swinging door and an impact-protected operable window suitable for a means of alternative exiting in an emergency.

**422.5 Design for dead, live, wind, rain, and impact loads.**

**422.5.1 Structural integrity criteria.**

1. The residential safe room shall be built with a complete structural system and a complete load path for vertical and lateral loads caused by gravity and wind.
2. The building that the residential safe room is in shall be assumed to be destroyed by the storm and shall not be taken as offering any protective shielding to the safe room enclosure.
3. The ceiling structure and wall shall be capable of supporting a superimposed debris load of the full weight of any building floors and roof above, but not less than 125 psf.
4. The residential safe room enclosure shall be capable of simultaneously resisting lateral and uplift wind pressures corresponding to a 160 mph 3-second peak gust, determined in accordance with ASCE 7, Minimum Design Loads for Buildings and Other Structures, calculated using load and importance Factors of 1.0. The site exposure factor shall be based on exposure C. The gust factor and the directionality factor shall be taken as 0.85. Topographic wind amplification caused by mountainous terrain shall be considered in accordance with the building code. Internal pressure shall be determined in accordance with ASCE 7.
5. The residential safe room shall be anchored to a foundation system capable of resisting the above loading conditions.

**422.5.2 Windborne debris impact protection of building enclosure elements.** The entire enclosure of the safe room, including all walls, ceilings, and openings, fixed or operable windows, and all entry doors into the safe room, shall meet or exceed Level D requirements of ASTM E 1996 (Table 422.5-1). Any wall or ceiling penetration greater than 4 square inches shall be considered an opening.

**Exception:** Electrical outlet boxes and interior lighting switches not penetrating more than 2.5-inches into the interior wall surface and a plumbing piping or conduit not greater than 1.5-inch in diameter shall be exempted from this requirement.

**422.5.3 Cyclic pressure loading of glazing and protective systems.** Impact protective systems shall meet the ASTM E 1996 cyclic pressure requirement for the loading given in Table 422.5-1.

**Table 422.5-1**  
**Windborne Debris Protection and Cyclic Pressure Criteria for Residential Safe Rooms**

<b>ASTM E 1996 Missile Level Rating</b>	<b>Debris Missile Size</b>	<b>Debris Impact Speed</b>	<b>Enclosure Wall Ceiling, and Floor Cyclic Air Pressure Testing—Maximum inward and maximum outward pressures</b>
D	2 x 4 weighing 9.0 lb. +/- 0.25 lb. and with min. length 8 ft. +/- 4 inch	50 ft./sec. or at least 34 mph	35 psf inward 45 psf outward

**422.6 Ventilation.** The residential safe room shall be naturally ventilated to allow the enclosure to have approximately one air change every two hours. This requirement may be satisfied by 12 square inches of venting per occupant. There shall be at least two operable vents. The vents shall be protected by a cowling or other device that shall be impact tested to comply with ASTM E 1996 Level D. Alternatively, the room shall be evaluated to determine if the openings are of sufficient area to constitute an open or partially enclosed condition as defined in ASCE 7.

**422.7 Communications.** The residential safe room shall be equipped with a phone line and telephone that does not rely on a separate electrical power outlet. Alternatively, a wireless telephone shall be permitted to rely on an Uninterruptible Power Supply (UPS) battery device.

**422.10 Notification.** The owner of the residential safe room shall notify the state department of defense and county civil defense agency of the property's tax map key or global positioning system coordinates.

**Section U103 State- and County-owned public high occupancy buildings - design criteria for enhanced hurricane protection areas.** Chapter 4 is amended by adding Section 423 to read as follows:

**SECTION 423 State- and County-owned public high occupancy buildings - design criteria for enhanced hurricane protection areas.**

**423.1 Intent.** The purpose of this Section is to establish minimum life safety design criteria for enhanced hurricane protection areas in high occupancy state- and county-owned buildings occupied during hurricanes of up to Saffir Simpson Category 3.

**423.2 Scope.** This section shall apply to state- and county-owned buildings which are of Occupancy Category III and IV defined by Table 1604.5 and of the following specific occupancies:

1. Enclosed and partially enclosed structures whose primary occupancy is public assembly with an occupant load greater than 300.
2. Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.
3. Any other state- and county-owned enclosed or partially enclosed building with an occupant load greater than 5,000.

4. Hospitals and other health care facilities having surgery or emergency treatment facilities.

**Exception:** Facilities located within flood zone V and flood zone A that are designated by the owner to be evacuated during hurricane warnings declared by the National Weather Service, shall not be subject to these requirements.

#### **423.3 Site criteria.**

**423.3.1 Flood and tsunami zones.** Comply with ASCE 24-05, Flood Resistant Design and Construction, based on provisions for Occupancy Category III.

1. Floor slab on grade shall be 1.5 foot above the base flood elevation of the County's flood hazard map, or at higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane.
2. Locate outside of V and Coastal A flood zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the Building Official. When a building within a V or Coastal A flood zone is approved, the bottom of the lowest structural framing member of any elevated first floor space shall be 2 feet above the base flood elevation of the County's flood hazard map, or at higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane.
3. Locate outside of tsunami evacuation zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the Building Official.

**423.3.2 Emergency vehicle access.** Provide at least one route for emergency vehicle access. The portion of the emergency route within the site shall be above the 100-year flood elevation.

**423.3.3 Landscaping and utility laydown impact hazards.** Landscaping around the building shall be designed to provide standoff separation sufficient to maintain emergency vehicle access in the event of mature tree blowdown. Trees shall not interfere with the functioning of overhead or underground utility lines, nor cause laydown or falling impact hazard to the building envelope or utility lines.

**423.3.4 Adjacent buildings.** The building shall not be located within 1,000 feet of any hazardous material facilities defined by Table 1604.5. Unanchored light-framed portable structures shall be not permitted within 300 feet of the building.

#### **423.4 Enhanced hurricane protection area program requirements.**

**423.4.1 Applicable net area.** At least 50 percent of the net square feet of a facility shall be constructed to qualify as an enhanced hurricane protection area. The net floor area shall be determined by subtracting from the gross square feet the floor area of excluded spaces, exterior walls, columns, fixed or movable objects, equipment or other features that under probable conditions cannot be removed or stored during use as a storm shelter.

**423.4.2 Excluded spaces.** Spaces such as mechanical rooms, electrical rooms, storage rooms, attic and crawl spaces, shall not be considered as net floor area permitted to be occupied during a hurricane.

**423.4.3 Occupancy capacity.** The occupancy capacity shall be determined by dividing the net area of the enhanced hurricane protection area by 15 square feet net floor area per person.

**423.4.4 Toilets and hand washing facilities.** Provide a minimum of 1 toilet per 50 enhanced hurricane protection area occupants and a minimum of 1 sink per 100 enhanced hurricane protection area

occupants, as determined in accordance with Section 423.4.3, located within the perimeter of the enhanced hurricane protection area. These required toilet and hand-washing facilities are not in addition to those required for normal occupancy and shall be included in the overall facility fixture count.

**423.4.5 Accessibility.** Where the refuge occupancy accommodates more than 50 persons, provide an ADA-accessible route to a shelter area at each facility with a minimum of 1 wheelchair space for every 200 enhanced hurricane protection area occupants determined in accordance with Section 423.4.3.

**423.5 Design wind, rain, and impact loads.**

**423.5.1 Structural design criteria.** The building main wind force resisting system and structural components shall be designed per ASCE 7 for a 115 mph minimum peak 3-second gust design speed with a load factor of 1.6, and an importance factor for Occupancy Category III. Topographic and directionality factors shall be the site-specific values determined in accordance with Appendix W. Design for interior pressure shall be based on the largest opening in any exterior facade or roof surface.

**423.5.2 Windborne debris missile impact for building enclosure elements.** Exterior glazing and glazed openings, louvers, roof openings and doors shall be provided with windborne debris impact resistance or protection systems conforming to ASTM E1996-05 Level D, i.e., 9 lb., 2 X 4, @ 50 fps (34 mph).

**423.5.3 Cyclic pressure loading of impact resistive glazing or windborne impact protective systems.** Resistance to the calculated maximum inward and outward pressure shall be designed to conform to ASTM E1996-05.

**423.5.4 Windows.** All unprotected window assemblies and their anchoring systems shall be designed and installed to meet the wind load and missile impact criteria of this Section.

**423.5.5 Window protective systems.** Windows may be provided with permanent or deployable protective systems, provided the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

**423.5.6 Doors.** All exterior and interior doors subject to possible wind exposure or missile impact shall have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels shall be provided with impact protective systems designed and installed to resist the wind load and missile impact criteria of this Section.

**423.5.7 Exterior envelope.** The building enclosure, including walls, roofs, glazed openings, louvers and doors, shall not be perforated or penetrated by windborne debris, as determined by compliance with ASTM E1996-05 Level C.

**423.5.8 Parapets.** Parapets shall satisfy the wind load and missile impact criteria of the exterior envelope.

**423.5.9 Roofs**

**423.5.9.1 Roof openings.** Roof openings (e.g., HVAC fans, ducts, skylights) shall be provided with protection for the wind load and missile impact criteria of Sections 423.5.2 and 423.5.3.

**423.5.9.2 High wind roof coverings.** Roof coverings shall be specified and designed according to the latest ASTM Standards for high wind uplift forces.



**423.5.9.3 Roof drainage.** Roofs shall have adequate slope, drains and overflow drains or scuppers sized to accommodate 100-year hourly rainfall rates in accordance with Section 1611.1, but not less than 2-inches per hour for 6 continuous hours.

#### **423.6 Ventilation.**

**423.6.1 Mechanical ventilation.** Mechanical ventilation as required in accordance with the International Mechanical Code. Air intakes and exhausts shall be designed and installed to meet the wind load and missile impact criteria of Sections 423.5.2 and 423.5.3.

**423.6.2 HVAC equipment anchorage.** HVAC equipment mounted on roofs and anchoring systems shall be designed and installed to meet the wind load criteria. Roof openings for roof-mounted HVAC equipment shall have a 12-inch-high curb designed to prevent the entry of rain water.

**423.7 Standby electrical system capability.** Provide a standby emergency electrical power system per Chapter 27 and NFPA 70 Article 700 Emergency Systems and Article 701 Legally Required Standby Systems, which shall have the capability of being connected to an emergency generator or other temporary power source. The emergency system capabilities shall include:

1. An emergency lighting system;
2. Illuminated exit signs;
3. Fire protection systems, fire alarm systems and fire sprinkler systems; and
4. Minimum mechanical ventilation for health/safety purposes.

**423.7.1 Emergency generator.** When emergency generators are pre-installed, the facility housing the generator, permanent or portable, shall be an enclosed area designed to protect the generators from wind and missile impact. Generators hardened by the manufacturer to withstand the area's design wind and missile impact criteria shall be exempt from the enclosed area criteria requirement.

#### **423.8 Quality assurance.**

**423.8.1 Information on construction documents.** Construction documents shall include design criteria, the occupancy capacity of the enhanced hurricane protective area, and Project Specifications shall include opening protection devices. Floor plans shall indicate all enhanced hurricane protection area portions of the facility and exiting routes there from. The latitude and longitude coordinates of the building shall be recorded on the construction documents.

**423.8.2. Special inspection.** In addition to the requirements of Chapter 17, special inspections shall include at least the following systems and components:

1. Roof cladding and roof framing connections;
2. Wall connections to roof and floor diaphragms and framing;
3. Roof and floor diaphragm systems, including collectors, drag struts and boundary elements;
4. Vertical windforce-resisting systems, including braced frames, moment frames and shear walls;
5. Windforce-resisting system connections to the foundation; and
6. Fabrication and installation of systems or components required to meet the impact-resistance requirements of Section 1609.1.2.

**Exception:** Fabrication of manufactured systems or components that have a label indicating compliance with the wind-load and impact-resistance requirements of this code.

**423.8.3 Quality assurance plan.** A construction quality assurance program shall be included in the construction documents and shall include:

1. The materials, systems, components, and work required to have special inspection or testing by the Building Official or by the registered design professional responsible for each portion of the work;
2. The type and extent of each special inspection;
3. The type and extent of each test;
4. Additional requirements for special inspection or testing for seismic or wind resistance; and
5. For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

**423.8.4 Peer review.** Construction documents shall be independently reviewed by a Hawai'i-licensed structural engineer. A written opinion report of compliance shall be submitted to State Civil Defense, the Building Official, and the owner.

**423.9 Maintenance.** The building shall be periodically inspected every three years and maintained by the owner to ensure structural integrity and compliance with this Section. A report of inspection shall be furnished to the State Civil Defense.

**423.10 Compliance re-certification when altered, deteriorated, or damaged.** Alterations shall be reviewed by a Hawai'i-licensed structural engineer to determine whether any alterations would cause a violation of this Section. Deterioration or damage to any component of the building shall require an evaluation by a Hawai'i-licensed structural engineer to determine repairs necessary to maintain compliance with this Section.

(97) Appendix W is added to read as follows:

## **APPENDIX W**

### **Hawai'i Wind Design Provisions for New Construction**

**W101 Revisions to chapter 16.** When Appendix W is adopted, wind design shall be in accordance with IBC Chapter 16 and IRC Chapter 3 as amended by Sections W101.1 through W101.10.

(98) Section 1602.1 is amended to add the definitions of "Building, Open"; "Building, Partially Enclosed"; and "Openings," as follows:

"BUILDING, OPEN" means a building having each wall at least 80 percent open. This condition is expressed for each wall by the equation:

$$A_o \geq 0.8 A_g$$

Where:

$A_o$  = Total area of openings in a wall that receives positive external pressure, in square feet (m<sup>2</sup>).

$A_g$  = The gross area of that wall in which  $A_o$  is identified, in square feet (m<sup>2</sup>).

"BUILDING, PARTIALLY ENCLOSED" means a building that complies with both of the following conditions:

1. The total area of openings in a wall that receives positive external pressure exceeds the sum of the areas of openings in the balance of the building envelope (walls and roof) by more than ten percent (10%); and

2. The total area of openings in a wall that receives positive external pressure exceeds four (4) square feet (0.37 m<sup>2</sup>) or one percent (1%) of the area of that wall, whichever is smaller, and the percentage of openings in the balance of the building envelope does not exceed twenty percent (20%).

These conditions are expressed by the following equations:

$$A_o > 1.10A_{oi}$$

$$A_o > 4 \text{ square feet (0.37 m}^2\text{) or } >0.01A_g, \text{ whichever is smaller, and } A_{oi}/A_{gi} \leq 0.20$$

Where:

$A_o$ ,  $A_g$  are as defined for an open building.

$A_{oi}$  = The sum of the areas of openings in the building envelope (walls and roof) not including  $A_o$ , in square feet (m<sup>2</sup>).

$A_{gi}$  = The sum of the gross surface areas of the building envelope (walls and roof) not including  $A_g$ , in square feet (m<sup>2</sup>).

“OPENINGS” means apertures or holes in the building envelope that allow air to flow through the building envelope and that are designed as “open” during design winds.

- (99) Section 1603.1 is amended to read:

**1603.1 General.** Construction documents shall show the size, section, and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.8 shall be indicated on the construction documents.

**Exception:** Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof live loads.
2. Ground snow load,  $P_g$ .
3. Basic wind speed (3-second gust), and effective wind speed  $V_{eff}$  (3-second gust), miles per hour (mph)(km/hr) and wind exposure.
4. Seismic design category and site class.
5. Flood design data, if located in flood hazard areas established in Section 1612.3.

- (100) Section 1603.1.4 is amended to read:

**1603.1.4 Wind design data.** The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral-force-resisting system of the building:

1. Basic wind speed (3-second gust), miles per hour (km/hr),  $V$ , and effective windspeed  $V_{eff}$ .
2. Wind importance factor  $I$ , and building category.
3. Wind exposure, if more than one wind exposure is utilized, the wind exposure for each applicable wind direction shall be indicated.
4. The applicable internal pressure coefficient.

5. Components and cladding. The design wind pressures in terms of psf (kN/m<sup>2</sup>) used for the design of exterior components, and cladding not specifically designed by the registered design professional.

(101) Section 1609.1.1 is amended to read:

**1609.1.1 Determination of wind loads.** Wind loads on every building or structure shall be determined in accordance with Chapter 6 of ASCE 7. Minimum values for Directionality Factor,  $K_d$ , Velocity Pressure Exposure Coefficient,  $K_z$ , and Topographic Factor,  $K_{zt}$ , shall be determined in accordance with Section 1609. The type of opening protection required, the basic wind speed and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

**Exceptions:**

1. Subject to the limitations of Section 1609.1.1.1, the provisions of SBCCI SSTD 10 shall be permitted for applicable Group R-2 and R-3 buildings.
2. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of the AF&PA WFCM.
3. Designs using NAAMM FP 1001.
4. Designs using TIA/EIA-222 for antenna-supporting structures and antennas.

(102) Section 1609.1.2 is amended to read:

**1609.1.2 Protection of openings.** In wind-borne debris regions, glazing in building shall be impact-resistant or protected with an impact-resistant covering meeting the requirements of an approved impact-resisting standard or ASTM E 1996 and ASTM E 1886 referenced therein as follows:

1. Glazed openings located within 30 feet (9144 mm) of grade shall meet the requirements of the Large Missile Test of ASTM E 1996.
2. Glazed openings located more than 30 feet (9144 mm) above grade shall meet the provisions of the Small Missile Test of ASTM E 1996.

**Exceptions:**

1. Wood structural panels with a minimum thickness of 7/16 inch (11.1 mm) and a maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be secured with the attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7. Attachment in accordance with Table 1609.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 mph (57.2 m/s).
2. Glazing in Occupancy Category I buildings as defined in Section 1604.5, including greenhouses that are occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.

3. Glazing in Occupancy Category II, III or IV buildings located over 60 feet (18 288) mm) above the ground and over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.
4. Glazing in Occupancy Category II and III buildings that can receive positive external pressure in the lower 60 feet (18 288 mm) shall be assumed to be openings unless such glazing is impact-resistant or protected with an impact-resistant system.

**Exception:** Glazing in Occupancy Category III buildings defined by Table 1604.5 of the following occupancies shall be provided with windborne debris protection:

1. Covered structures whose primary occupancy is public assembly with an occupant load greater than 300.
2. Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.
3. Any other public building with an occupant load greater than 5,000.

**Table 1609.1.2**  
**Wind-Borne Debris Protection Fastening Schedule For Wood Structural Panels** <sup>a,b,c,d</sup>

Fastener Type	Fastener Spacing		
	Panel span ≤ 4 ft.	Panel span > 4 ft. and ≤ 6 ft.	Panel span > 6 ft. and ≤ 8 ft.
No. 6 screws	16"	12"	9"
No. 8 screws	16"	16"	12"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 0.454 kg,

1 mile per hour = 1.609 km/h.

- a. This table is based on a maximum wind speed (3-second gust) of 130 mph and mean roof height of 33 feet or less.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1 inch from the edge of the panel.
- c. Fasteners shall be long enough to penetrate through the exterior wall covering a minimum of 1.75 inches into wood wall framing; a minimum of 1.25 inches into concrete block or concrete; or into steel framing by at least three threads. Fasteners shall be located a minimum of 2.5 inches from the edge of concrete block or concrete.
- d. Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum withdrawal capacity of 490 pounds.

**1609.1.2.1 Building with openings.** Where glazing is assumed to be an opening in accordance with Section 1609.1.2 #4, the building shall be evaluated to determine if the openings are of sufficient area to constitute an open or partially enclosed building as defined in ASCE 7. [Open and partially enclosed buildings shall be designed in accordance with the applicable provisions of ASCE 7. Partially enclosed Group R-3 buildings shall also include a residential safe room in accordance with Section 422.] Open and partially enclosed (no glazing protection provided as required by Section 1609.1.2 Protections of openings) Group R-3 buildings in wind-borne debris regions shall also include a residential safe room in accordance with Section 422.

**1609.1.2.2 Louvers.** Louvers protecting intake and exhaust ventilation ducts not assumed to be open that are located within 30 ft (9144 mm) of grade shall meet requirements of an approved impact-resisting standard or the Large Missile Test of ASTM E 1996.

(103) The definition of “Wind-Borne Debris Region” in Section 1609.2 is amended to read:

“WIND-BORNE DEBRIS REGION” means portions of hurricane-prone regions that are within one (1) mile (1.61 km) of the coastal mean high water line where the effective basic wind speed is 110 mph (48 m/s) or greater; or portions of hurricane-prone regions where the effective basic wind speed is 120 mph (53 m/s) or greater.

(104) Section 1609.3 is amended to read:

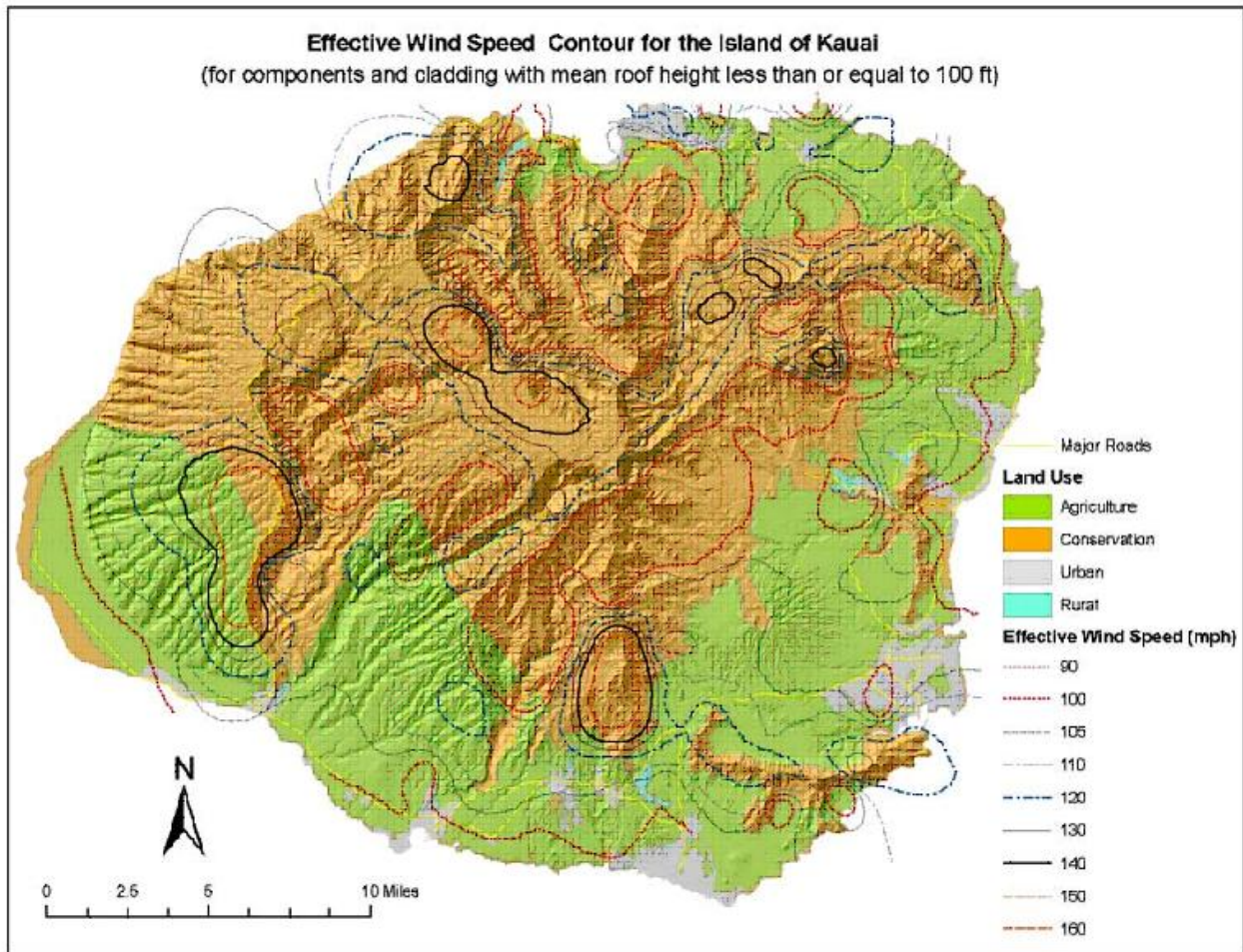
**1609.3 Basic wind speed and topographic and directionality factors.** The basic wind speed, in mph, for the determination of the wind loads shall be determined by Figure 1609. Special wind regions near mountainous terrain and valleys are accounted within the Topographic Factor defined in Section 1609.3.3 Wind speeds derived from simulation techniques shall only be used in lieu of the basic wind speeds given in Figure 1609 when:

1. Approved simulation or extreme-value statistical-analysis procedures are used (the use of regional wind speed data obtained from anemometers is not permitted to define the hurricane wind speed risk in Hawai‘i); and
2. The design wind speeds resulting from the study shall not be less than the resulting 700-year return period wind speed divided by  $\sqrt{1.6}$ .

(105) Section 1609.3.2 is added to read:

**1609.3.2 Effective basic wind speed conversion.** For Section 2308.10.1, the provisions of ASCE 7 Section 6.4, and the exceptions permitted under Section 1609.1.1, the basic wind speed value used for determination of the wind loads, shall be the Effective Basic Wind Speed,  $V_{eff}$ , determined by Figure 1609.1.1.1, which adjusts the basic wind speed for special topographic wind regions.

(106) Figure 1609.1.1.1(f) is added:



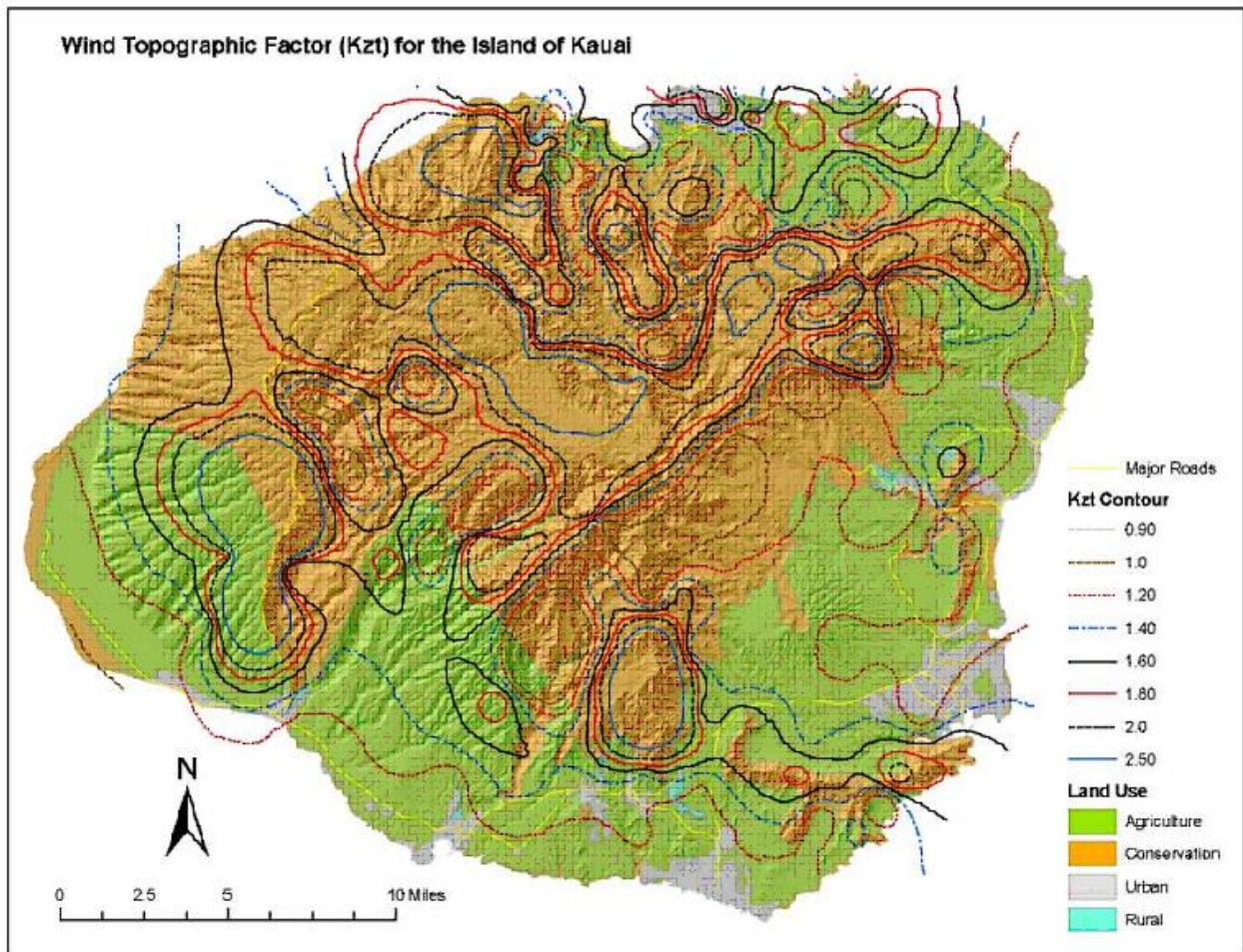
**Figure 1609.1.1.1(f)**  
**County of Kaua'i Effective Basic Wind Speed,  $V_{eff}$ , for Components and Cladding for Buildings Less than 100 Feet Tall**



(107) Section 1609.3.3 is added to read:

**1609.3.3 Topographic effects.** Wind speed-up effects caused by topography shall be included in the calculation of wind loads by using the factor  $K_{zt}$ , where  $K_{zt}$  is given in Figure 1609.3.3(f).

**Exception:** Site-specific probabilistic analysis of directional  $K_{zt}$  based on wind-tunnel testing of topographic speed-up shall be permitted to be submitted for approval by the Building Official.

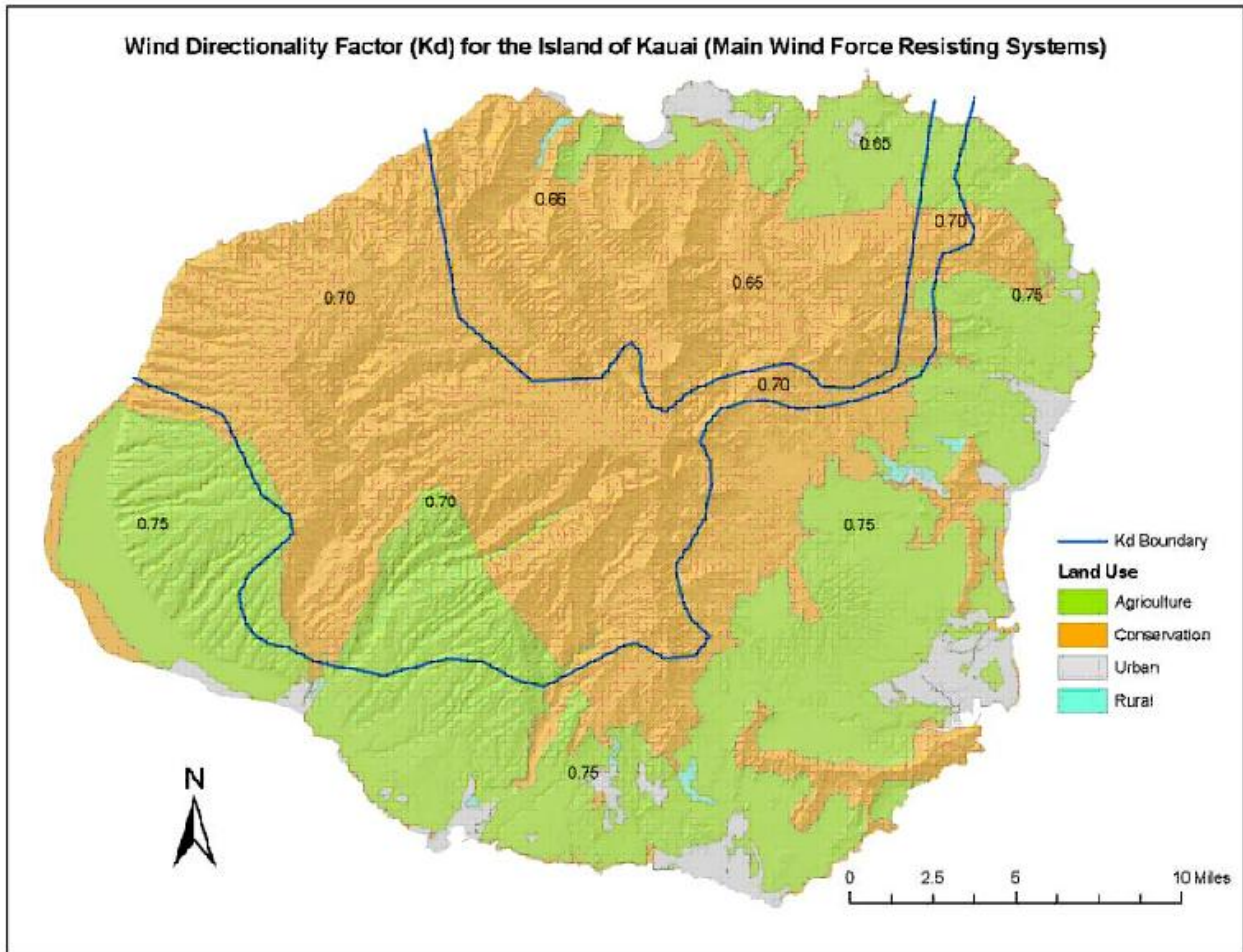


**Figure 1609.3.3(f)**  
**County of Kaua'i Peak Gust Topographic Factor  $K_{zt}$**



(108) Section 1609.3.4 is added to read:

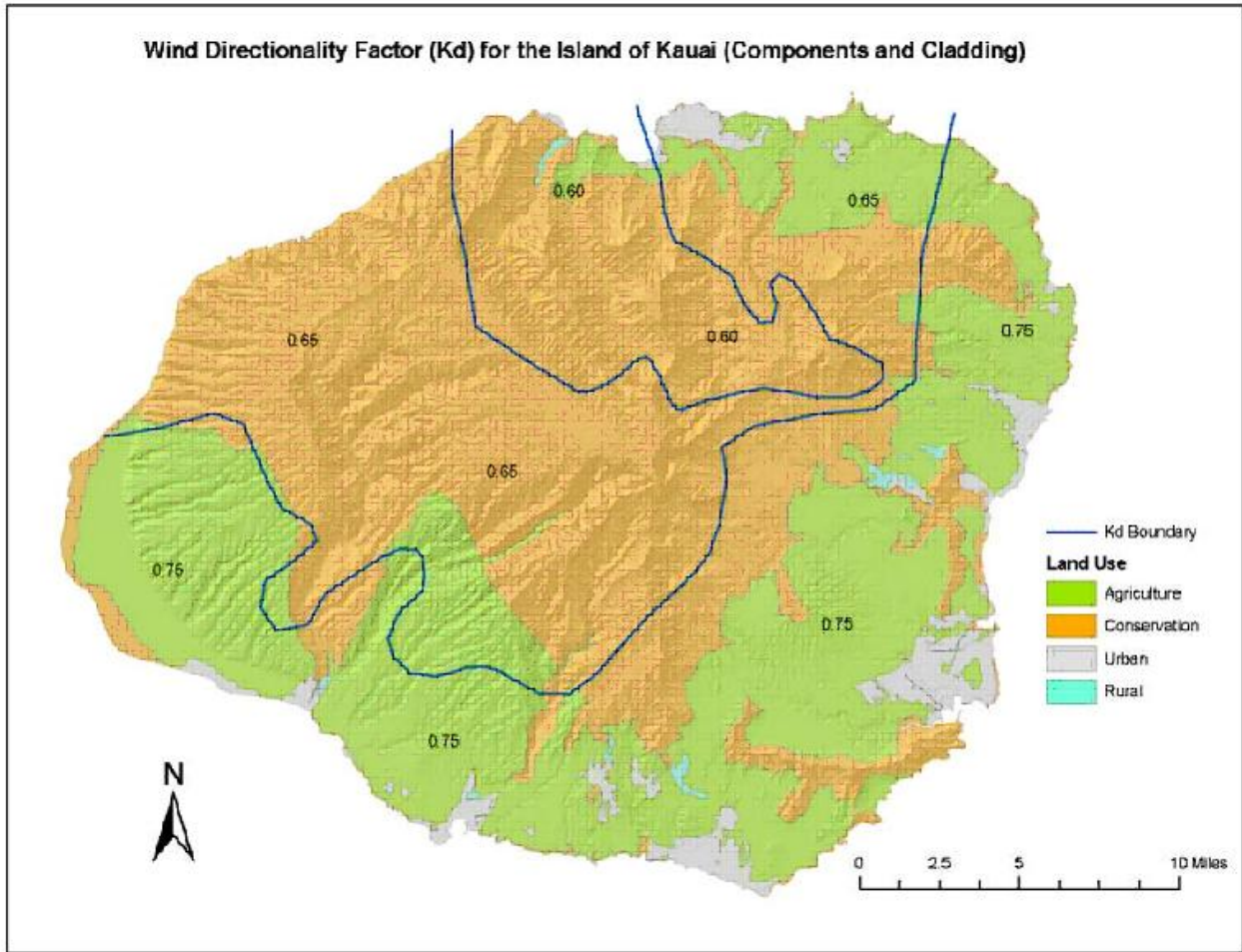
**1609.3.4 Directionality factor.** The wind directionality factor,  $K_d$ , shall be determined from Figure 1609.3.4(a)(4) and Figure 1609.3.4(b)(4).



**Figure 1609.3.4(a)(4)**

**$K_d$  Values for Main Wind Force Resisting Systems Sited on Kaua'i County, Hawai'i<sup>a,b</sup>**

- The values of  $K_d$  for other non-building structures indicated in ASCE 7 Table 6-4 shall be permitted.
- Site-specific probabilistic analysis of  $K_d$  based on wind-tunnel testing of topography and peak gust velocity profile shall be permitted to be submitted for approval by the Building Official, but  $K_d$  shall have a value not less than 0.65.



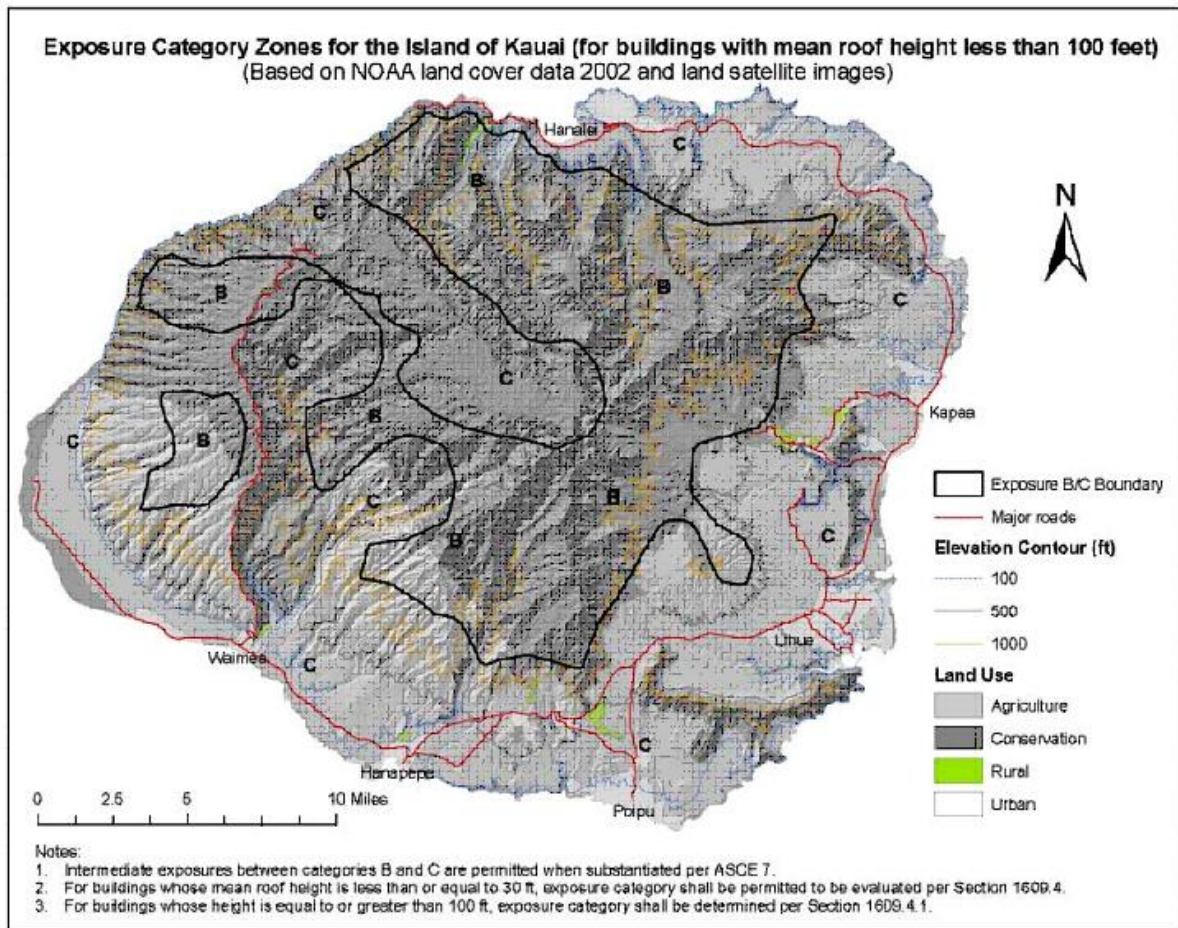
**Figure 1609.3.4(b)(4)**

**$K_d$  Values for Components and Cladding of Buildings Sited on Kaua'i County, Hawai'i<sup>a,b</sup>**

- The values of  $K_d$  for other non-building structures indicated in ASCE 7 Table 6-4 shall be permitted.
- Site-specific probabilistic analysis of  $K_d$  based on wind-tunnel testing of topography and peak gust velocity profile shall be permitted to be submitted for approval by the Building Official, but  $K_d$  shall have a value not less than 0.65.

(109) Section 1609.4.4 is added to read:

**1609.4.4 Exposure category maps.** Exposure categories are permitted to be determined using Figure 1609.4.4(e).



**Figure 1609.4.4(e)**  
**Exposure Category Zones for Kaua'i County**

**W102 Revisions to Chapter 23.** When Appendix W is adopted, wood construction shall be in accordance with Chapter 23 as amended by Sections W102.1 and W102.2.

(110) Section 2308.2.1 is amended to read:

**2308.2.1 Basic wind speed greater than 100 mph.** Where the Effective Basic Wind Speed exceeds 100 mph, the provisions of the AF&PA WFCM, or the SBCCI SSTD 10 are permitted to be used.

(111) Table 2308.10.1 is amended to read:

**Table 2308.10.1**  
**Required Rating of Approved Uplift Connectors (pounds)<sup>a,b,c,d,e,f,g,h,i</sup>**

Effective Basic Wind Speed	Roof Span (feet)							Overhangs (pounds/ft) <sup>d</sup>
V <sub>eff</sub> , 3-sec gust	12	20	24	28	32	36	40	
85	-72	-120	-144	-168	-192	-216	-240	-38.55
90	-91	-152	-182	-213	-243	-274	-304	-43.22
100	-131	-218	-262	-305	-349	-392	-436	-53.36
110	-175	-292	-350	-409	-467	-526	-584	-64.56
120	-240	-400	-480	-560	-640	-720	-800	-76.83
130	-304	-506	-607	-708	-810	-911	-1012	-90.17

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 1.61 km/hr, 1 pound = 0.454 Kg, 1 pound/foot = 14.5939 N/m.

- a. The uplift connection requirements are based on a 30-foot mean roof height located in Exposure B. For Exposure C and for other mean roof heights, multiply the above loads by the adjustment coefficients below.

Exposure	Mean Roof Height (feet)									
	15	20	25	30	35	40	45	50	55	60
B	1.00	1.00	1.00	1.00	1.05	1.09	1.12	1.16	1.19	1.22
C	1.21	1.29	1.35	1.40	1.45	1.49	1.53	1.56	1.59	1.62

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 1.61 km/hr, 1 pound = 0.454 Kg, 1 pound/foot = 14.5939 N/m.

- b. The uplift connection requirements are based on the framing being spaced 24 inches on center. Multiply by 0.67 for framing spaced 16 inches on center and multiply by 0.5 for framing spaced 12 inches on center.
- c. The uplift connection requirements include an allowance for 10 pounds of dead load.
- d. The uplift connection requirements do not account for the effects of overhangs. The magnitude of the above loads shall be increased by adding the overhang loads found in the table. The overhang loads are also based on framing spaced 24 inches on center. The overhang loads given shall be multiplied by the overhang projection and added to the roof uplift value in the table.
- e. The uplift connection requirements are based upon wind loading on end zones as defined in Figure 6-2 of ASCE 7. Connection loads for connections located a distance of 20 percent of the least horizontal dimensions of the building from the corner of the building are permitted to be reduced by multiplying the table connection value by 0.7 and multiplying the overhang load by 0.8.
- f. For wall-to-wall and wall-to-foundation connections, the capacity of the uplift connector is permitted to be reduced by 100 pounds for each full wall above. (For example, if a 500-pound rated connector is used on the roof framing, a 400-pound rated connector is permitted at the next floor level down.)
- g. Interpolation is permitted for intermediate values of basic wind speeds and roof spans.



- h. The rated capacity of approved tie-down devices is permitted to include up to a 60-percent increase for wind effects where allowed by material specifications.
- i.  $V_{eff}$  is given by Figure 1609.1.1.1.

(112) Appendix X is added to read as follows:

## **APPENDIX X Hawai'i Provisions For Indigenous Hawaiian Architecture Structures**

### **Section X101 General.**

**X101.1 Scope.** The provisions of this appendix shall apply exclusively to Indigenous Hawaiian Architecture Structures. The purpose of these provisions is to acknowledge and establish procedures for designing and constructing indigenous Hawaiian architecture structures.

**X101.2 Publications incorporated by reference.** The following publications are incorporated by reference and made a part of these provisions. Where there is a conflict between Appendix X and the referenced documents, Appendix X shall prevail.

1. "Hawaiian Thatched House" (1971), by Russell A. Apple, published by the United States Department of the Interior,
2. "Hale Construction Standards" (2000), by Francis Sinenci and Bill Sides,
3. "The Hawaiian Grass House in Bishop Museum" (1988), by Catherine C. Summers, and
4. "Arts and Crafts of Hawai'i," Section II, Houses (1957), by Te Rangi Hiroa (Peter H. Buck).

**X101.3 Definitions.** For purposes of this appendix, the following words and terms shall have the meanings shown herein. Refer to Chapter 2 for general definitions.

**CERTIFIED HALE BUILDER.** A person who has obtained a certificate of completion for satisfactorily completing a course in Hawaiian hale construction from the University of Hawai'i, or any of its community colleges, or as approved by the Building Official.

**GROUP OF STRUCTURES.** A group of indigenous Hawaiian architecture structures that are in close proximity to each other and have an aggregate floor area of 1,800 square feet or less.

**INDIGENOUS HAWAIIAN ARCHITECTURE STRUCTURE or HALE.** A structure that is consistent with the design, construction methods and uses of structures built by Hawaiians in the 1800s, which uses natural materials found in the Hawaiian islands, and complies with this appendix and references.

**SEPARATION.** The clear distance between two structures.

**SETBACK.** The clear distance between a structure and a property line.

### **Section X201 Material requirements.**

**X201.1 Hale materials.** Hale shall be constructed using only materials grown and harvested in the State of Hawai'i.

**X201.2 Wood framing material.** The wood members for the hale, such as posts and rafters, shall be, but not limited to hardwoods of unmilled, straight sections of trunks or branches of the following species:

1. Casaurina equisetifolia (ironwood).
2. Prosopis-allid (kiawe).

3. Eucalyptus robusta (eucalyptus).
4. Psidium cattleianum (strawberry guava).
5. Metrosideros polymorpha (ohia).
6. Rizophora mangle (mangrove).

**Exception:** Ardisia elliptica (inkberry) may be used only for roof purlins as an alternative to specified woods listed in Items 1 through 6.

**X201.3 Roofing and siding.** Thatched roofing and siding materials for the hale may be any grass or leaf material grown and harvested in the State of Hawai‘i, to include but not be limited to pili, kualohia, pueo, kawelu, sugarcane leaves, and ti leaves.

**X201.4 Cord.** Natural or synthetic cord used for lashing structural members of the hale shall be 400 pound test. Cord used for tying floating purlins and thatched materials shall be 100 pound test. All cord used on the hale shall be shades of green, tan, brown or black.

**X201.5 Metal prohibited.** Metal shall not be used for the construction of the hale.

#### **Section X202 Size and location.**

**X202.1 Height and size limitation.** Hale shall be one-story, detached structure not exceeding 1,800 square feet. Hale shall not exceed the size indicated in Table X202.1.

**Table X202.1**  
**Maximum Size of Hale (feet)**

<b>Hale Halawai</b>	<b>Hale Ku‘ai</b>	<b>Hale Noa</b>	<b>Hale Wa‘a</b>
30 X 60	14 X 20	14 X 24	30 X 60

**X202.2 Zoning requirements.** Hale shall comply with minimum yard requirements in the zoning codes.

**X202.3 Minimum separation.** The minimum separation between a hale and another structure shall be at least 10 feet for a one-story structure; 15 feet for a two-story structure; or a distance equal to the height of the hale, whichever is more. The minimum separation between two hale shall be at least 10 feet or a distance equal to the height of the taller hale.

**X202.4 Hale Noa.** Hale noa structures may only be constructed on property where a separate residence exists on the property.

#### **Section X203 Allowable and prohibited uses.**

**X203.1 Allowable uses.** To the extent permitted by other applicable law, allowable uses for hale structures shall be in accordance with Table X203.1.

**Table X203.1**  
**Allowable Use for Each Hale Type**

<b>Use</b>	<b>Hale Halawai</b>	<b>Hale Ku‘ai</b>	<b>Hale Noa</b>	<b>Hale Wa‘a</b>
Eating (ai)	Allowed	Allowed	Not permitted	Allowed
Assembling (halawai)	Allowed	Allowed	Not permitted	Allowed
Sleeping (moe)	Not permitted	Not permitted	Allowed	Not permitted
Retailing (e.g., fruits) (ku‘ai)	Allowed	Allowed	Not permitted	Allowed
Storage (papa‘a)	Not permitted	Allowed	Not permitted	Allowed

**X203.2 Prohibited uses and activities.** The following uses and activities shall be prohibited from occurring within or near the hale:

1. Cooking.
2. Open flames.
3. Generators.
4. Extension cords.
5. Electrical switches, fixtures, or outlets.
6. Plumbing faucets, fixtures, or drains.
7. Power tools.
8. No screen, mesh, plastic or any other similar material shall be attached to the hale.
9. Hale shall not be used as a food establishment as defined in the administrative rules adopted by the state department of health.

**X203.3 Maintenance.** The hale shall be maintained by the owner to ensure structural integrity. Repairs for maintenance of the hale shall not require additional building permits.

**Section X301 Fire protection.**

**X301.1 Fire protection classifications.** Fire protection for Indigenous Hawaiian architecture structures shall be as required in Table X301.1.

**Table X301.1**  
**Fire Protection Requirements Based on Setback**

<b>Class</b>	<b>Setback Requirements</b>	<b>Fire Protection Requirements</b>
<b>A</b>	The structure (or a group of structures) is: 1. Located at least 100 feet from any existing structure on the same or neighboring properties; and 2. Located at least 100 feet from any property line, except as follows: a. If the property line abuts a public way, the 100 feet minimum setback for that property line shall be reduced by the width of the public way; b. If the property line abuts the shoreline, the minimum setback for that property line shall be the shoreline setback; or c. For any hale ku‘ai in the agricultural district that is less than 200 square feet, that is completely open on three sides, and that is used as an agricultural products stand and if the property line abuts a public way, the minimum setback for that property line shall be 15 feet.	No fire protection is required for the structure.
<b>B</b>	The structure (or a group of structures) that conforms to applicable zoning setback requirements but does not satisfy Class A setback requirements.	Automatic fire sprinkler system shall be installed in accordance with design standards in Section X301.2. An electrical permit is required for fire sprinkler systems.

**X301.2 Automatic fire sprinklers.** The design standards for automatic fire sprinklers for Class B indigenous Hawaiian architecture structures shall be in accordance with NFPA 13.

**Exception:** The design standards for automatic fire sprinklers for Class B indigenous Hawaiian architecture structures shall be permitted as follows:

1. 18 gallons per minute for a single head at 140 square feet maximum coverage of roof area.

2. 13 gallons per minute for each subsequent head at 140 square feet maximum coverage of roof area per head.
3. The minimum supply pressure at the base of the riser shall not be less than 40 pounds per square inch.
4. The minimum residual pressure at the highest sprinkler shall be not less than 12 pounds per square inch.
5. Sprinkler head spacing shall not exceed 14 feet.
6. Sprinkler heads shall be open type upright, pendent, or sidewall with 1/2-inch or 17/32-inch orifice and have a wax corrosion resistant coating.
7. The total number of sprinklers on a branch shall not exceed 6 heads.
8. The total number of sprinklers shall not exceed the quantity shown in Table X301.2(a).

**Table X301.2(a)**  
**Total Number of Fire Sprinklers Based on Pipe Size**

<b>Piping Size</b>	<b>Number of Sprinklers</b>
1 inch diameter	2 sprinklers
1¼ inch diameter	3 sprinklers
1½ inch diameter	5 sprinklers
2 inch diameter	10 sprinklers
2½ inch diameter	30 sprinklers
3 inch diameter	60 sprinklers

9. The pipe schedule table in Item 8 shall not apply to hydraulically designed systems.
10. The water density shall not be less than 0.10 gpm per square foot.
11. The source of water may be by domestic water meters, detector check meter, underground well, storage tank, swimming pool, ponds, etc., but must meet the design requirements for adequate pressure and duration.
12. Water supply shall be sufficient to provide 30 minutes duration.
13. If domestic water meters are used as the source of water for the fire sprinklers, without a storage tank and booster pump, the maximum number of sprinklers shall not exceed the number shown in Table X301.2(b).

**Table X301.2(b)**  
**Total Number of Fire Sprinklers Based on Water Meter Size**

<b>Size of Water Meter</b>	<b>Number of Sprinklers</b>
5/8 inch water meter	1 sprinkler
¾ inch water meter	2 sprinklers
1 inch water meter	3 sprinklers
1½ inch water meter	7 sprinklers
2 inch water meter	11 sprinklers
3 inch water meter	27 sprinklers



14. The piping material shall be hard drawn copper with silver solder or brazed fittings, or carbon steel with corrosion-resistant coatings. Plastic pipes shall not be allowed, except for below grade supply pipes.
15. Fire sprinkler system shall be actuated by smoke detectors located at the highest points of the roof and spaced as recommended by the manufacturer.
16. Flow control valves shall be either hydraulically or electrically operated with a manual override switch.
17. Where the width of a roof exceeds the width allowed for one row of sprinklers, two or more rows of sprinklers shall be placed such that the entire roof area is protected.
18. Prevailing wind direction shall be considered in the placement of sprinklers.
19. Deflectors for sprinklers shall be parallel with the roof surface or tilted slightly towards the peak of the roof.
20. Fire sprinklers system shall have a local alarm activated by a smoke detector.

**X301.3 Certification of water supply.** For any hale that requires fire protection pursuant to X301.1, the applicant shall provide a certification from a licensed engineer or a licensed C-20 contractor that the water supply for the fire sprinkler system has been tested and is capable of delivering the required fire flow for 30 minutes duration.

**X302 Smoke alarm.** Any hale used for sleeping shall have an approved battery operated smoke alarm installed in the hale.

#### **Section X401 Design standards.**

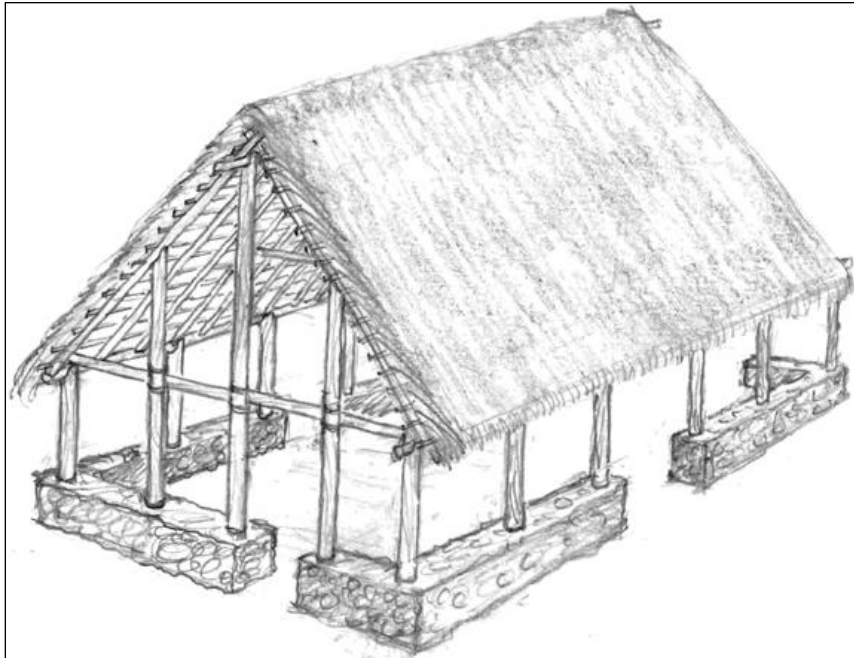
**X401.1 General design standards.** All types of hale shall be designed and constructed in accordance with the standards set out in this Section.

1. The minimum diameter size of all structural members shall be measured at the member's midpoint, except that the minimum diameter size of posts shall be measured at the smaller end. For structure sizes not specifically shown in the tables, the requirements in the next larger width size shall be applicable.
2. The specifications for structural members were estimated based on no wind loads. Hale shall be constructed to allow all thatching materials to separate from the structure prior to adding significant loads.
3. The mix formula for mortar specified in these rules shall be one part portland cement, four parts clean sand, and sufficient fresh water to make the mixture workable.
4. Every hale, except hale noa, shall have at least two sides completely open.
5. Lashing and thatching methods shall comply with illustrations found in "Arts and Crafts of Hawai'i" or "The Hawaiian Grass House in Bishop Museum" referenced in Section X101.2.

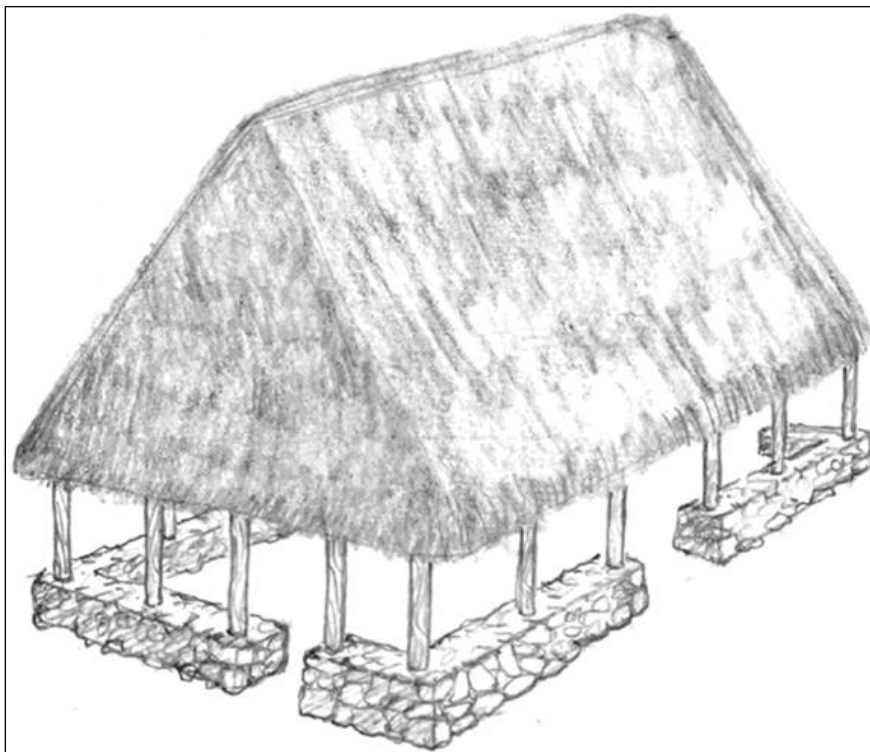
**X402 Allowable designs.** Hale shall be designed and constructed in accordance with the requirements in Sections 402.1 through 402.4.

**X402.1 Hale Halawai.** Each end of the Hale Halawai may be open or thatched. The ends may also be constructed with a thatched roof hip as an alternate design. Hale Halawai shall be designed in accordance with the following schematics and illustrations. Structural components for Hale Halawai

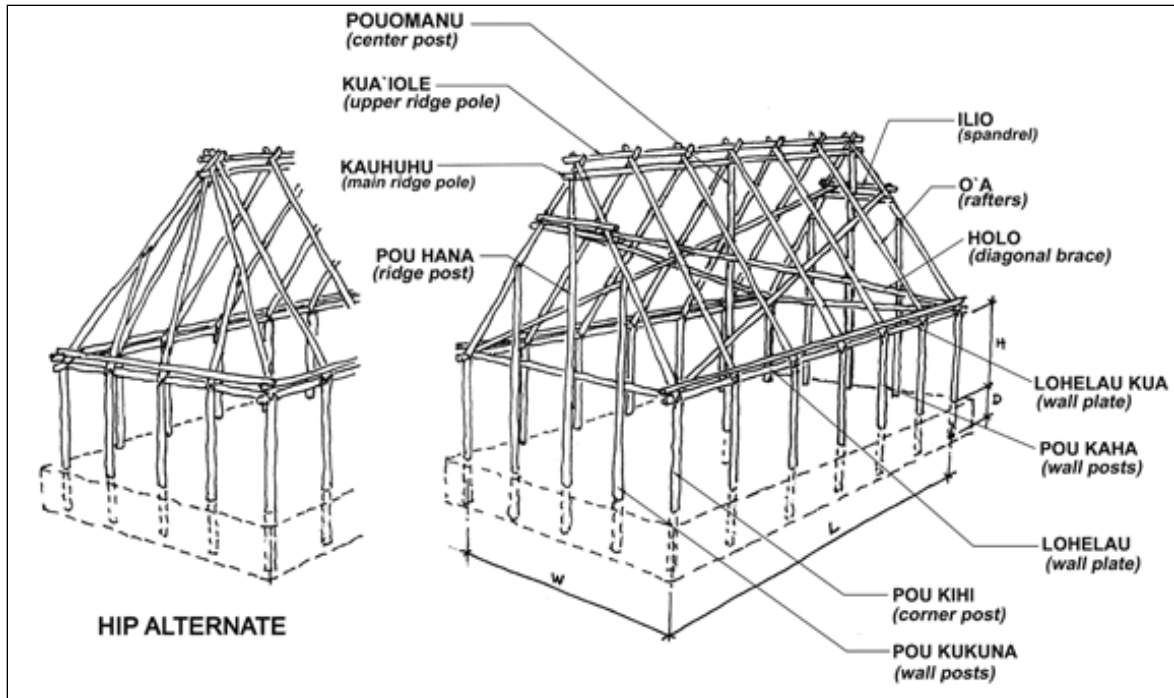
shall meet the size and spacing requirements in Table X402.1(a). Foundations for Hale Halawai shall be designed in accordance with Table X402.1(b).



**HALE HALAWAI**  
**Open End Style**



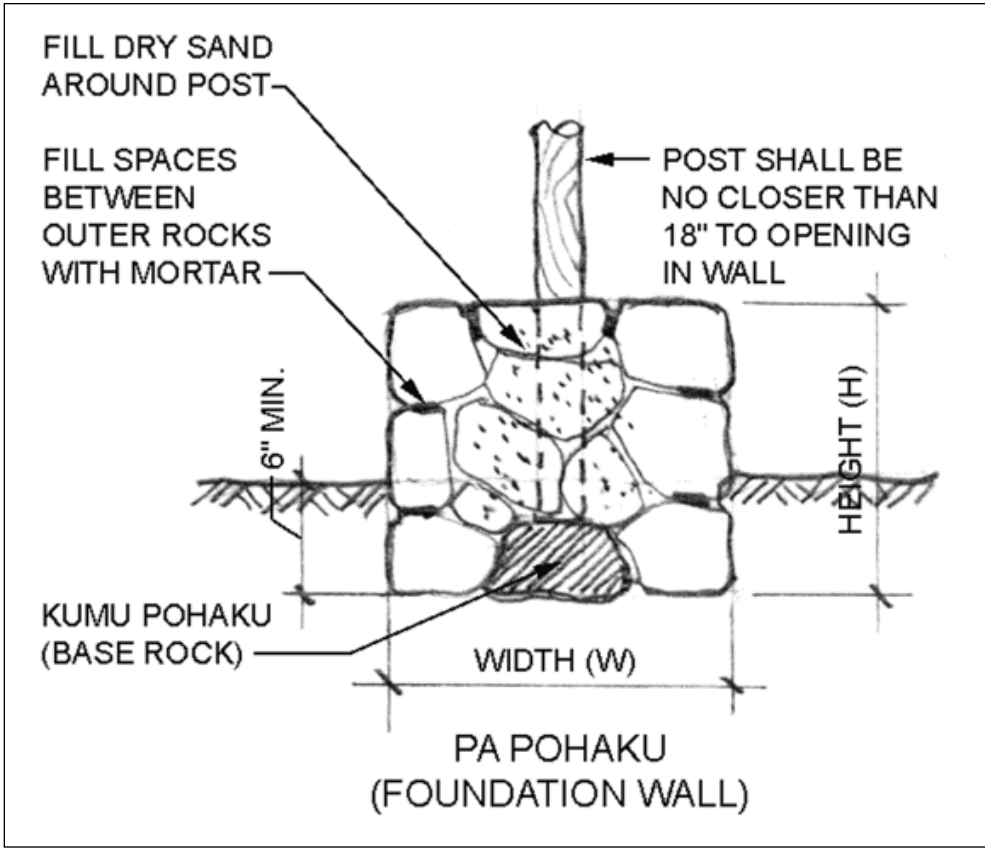
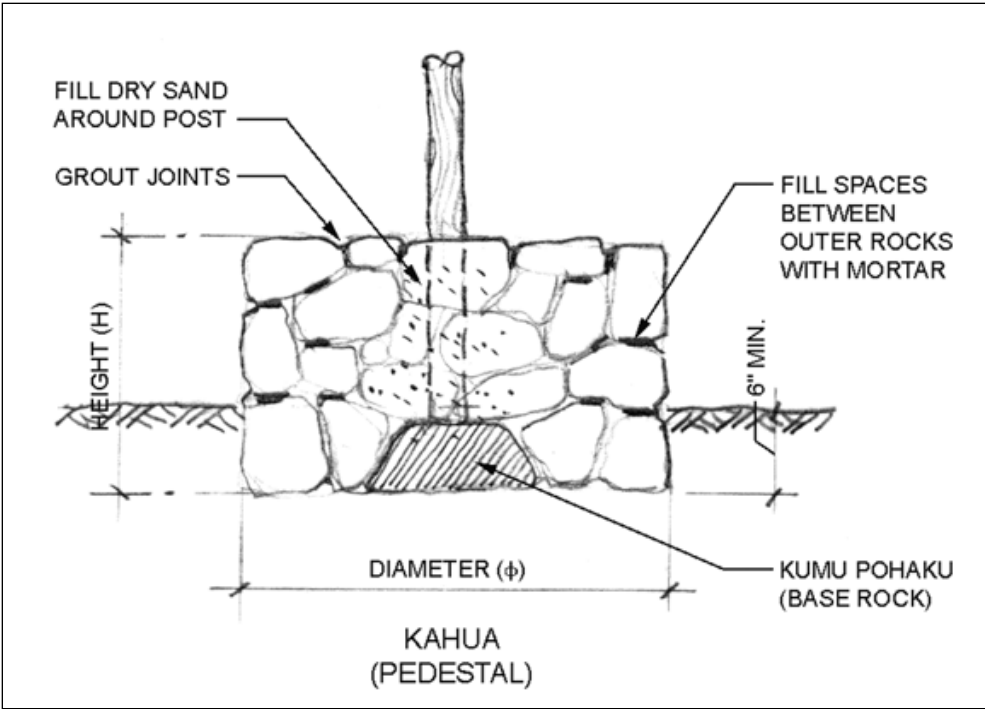
**HALE HALAWAI**  
**Thatched End Style**

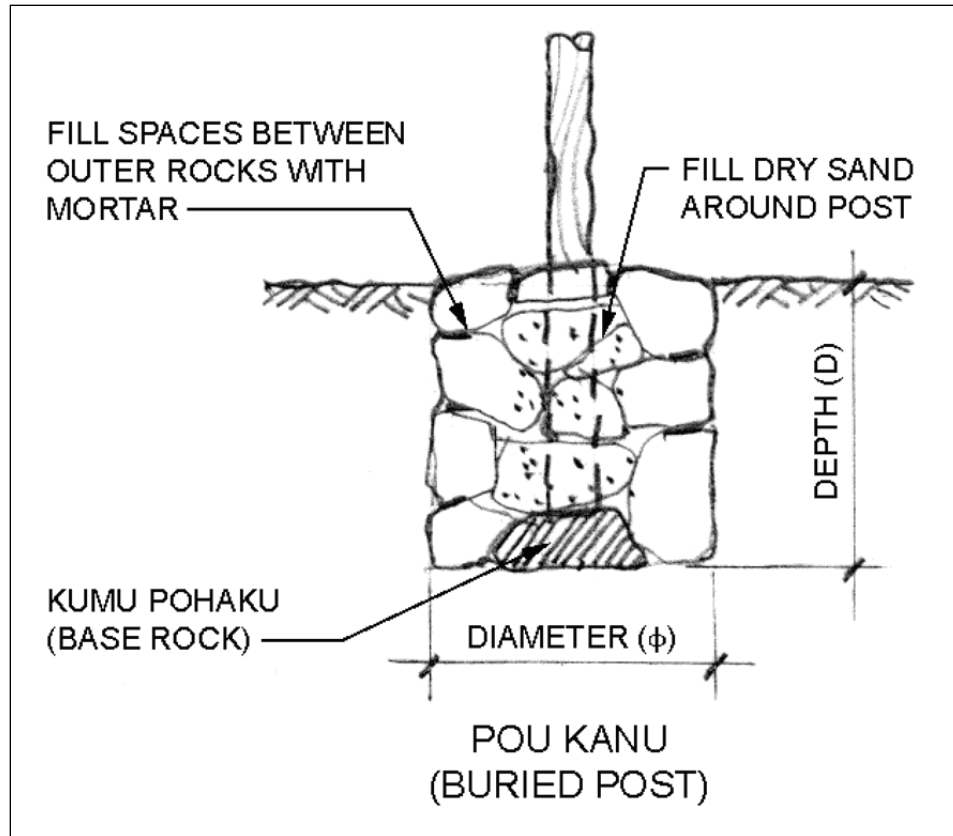


Framing Schematic

Table X402.1(a)  
Size and Spacing Requirements for Structural Components Used in Hale Halawai

	pou kihi	pou kukuna & pou kaha	pou hana & pouomanu	o' a	kua'iole & holo	kauhuhu	lohelau	Max. post spacing (feet)	Max. rafter spacing (feet)
Size W x L x H	Minimum diameter (inches)								
12' x 20' x 7'	4	3½	4	3½	2½	3	3	5	3
14' x 24' x 7'	4	4	4½	3½	2½	3	3½	5	3
24' x 30' x 7'	5	4½	4½	4	2½	3	3½	5	3
25' x 50' x 7'	5½	5	5½	4	2½	3	3½	5	3
30' x 60' x 7'	6	5½	6	4½	2½	3	4	5	3

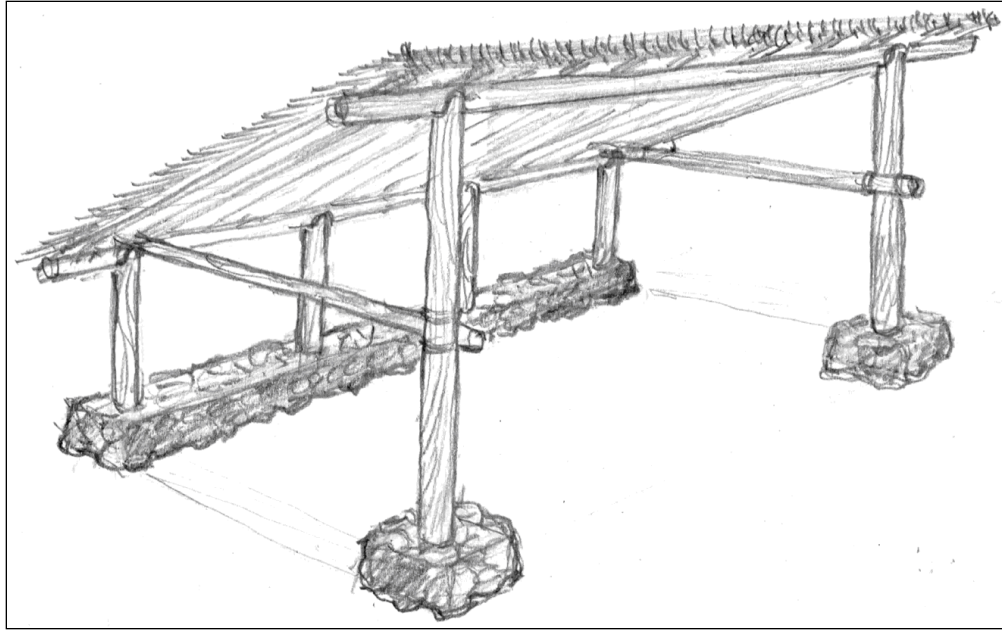




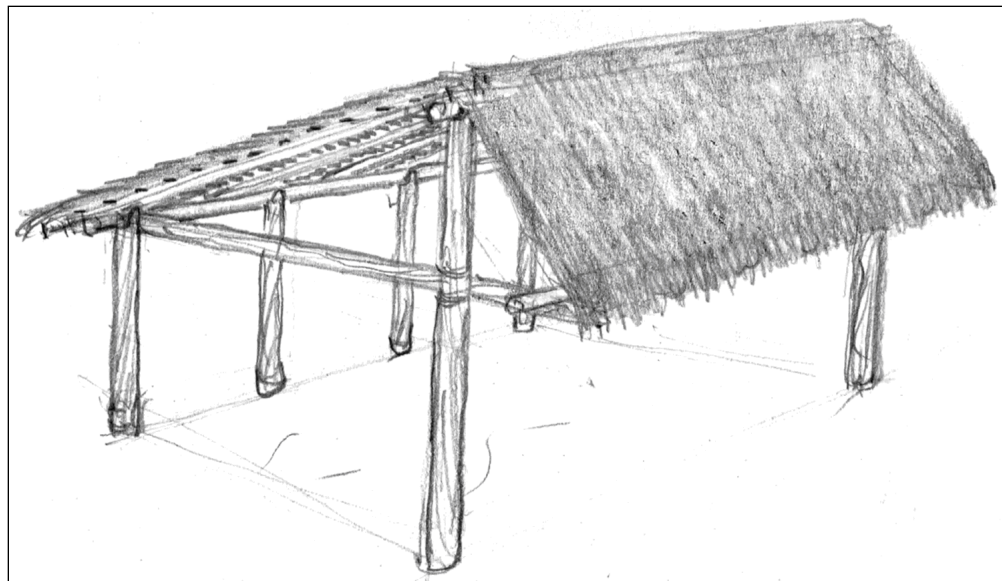
**Table X402.1(b)**  
**Foundation Design for Hale Halawai**

Size (W x L x H)	Foundation Type		
	kahua	pa pohaku	pou kanu
	Diameter x Height	Width x Height x Length	Diameter x Depth
12' x 20' x 7'	3'6"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'8"D
14' x 24' x 7'	3'8"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'9"D
24' x 30' x 7'	4'0"φ x 30"H	3'0"W x 3'0"H x 4'0"L	36"φ x 3'0"D
25' x 50' x 7'	4'0"φ x 30"H	3'0"W x 3'0"H x 4'0"L	36"φ x 3'0"D
30' x 60' x 7'	4'0"φ x 30"H	3'0"W x 3'3"H x 4'0"L	36"φ x 3'3"D

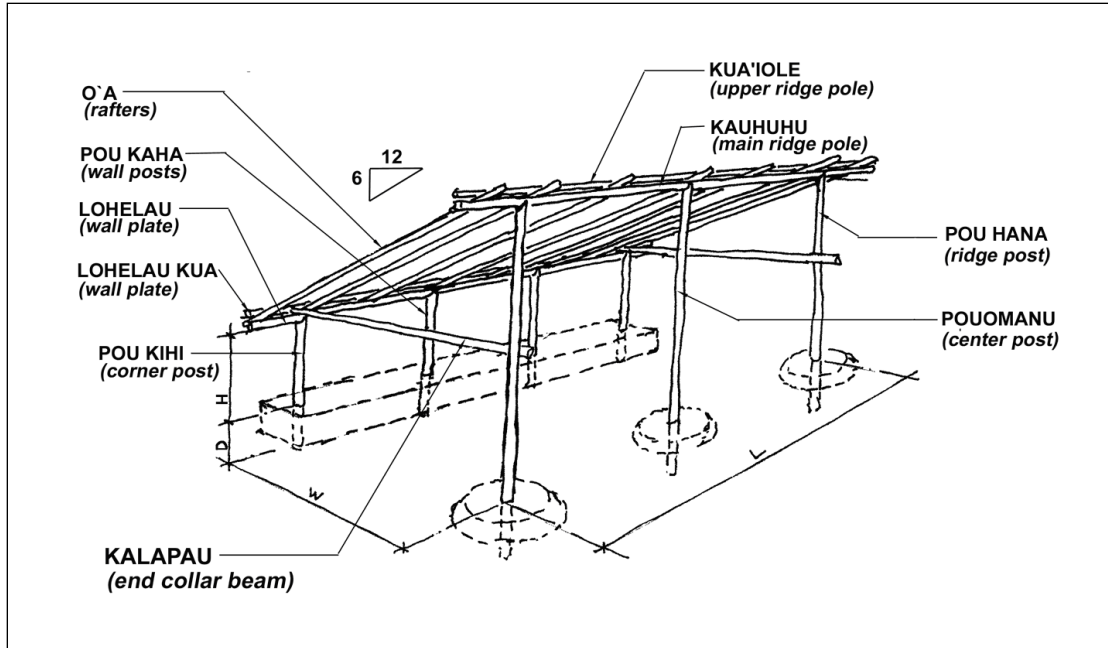
**X402.2 Hale Ku'ai.** Hale Ku'ai shall be designed in accordance with the following schematics and illustrations. Structural components for Hale Ku'ai shall meet the size and spacing requirements in Table X402.2(a). Foundations for Hale Ku'ai shall be designed in accordance with Table X402.2(b).



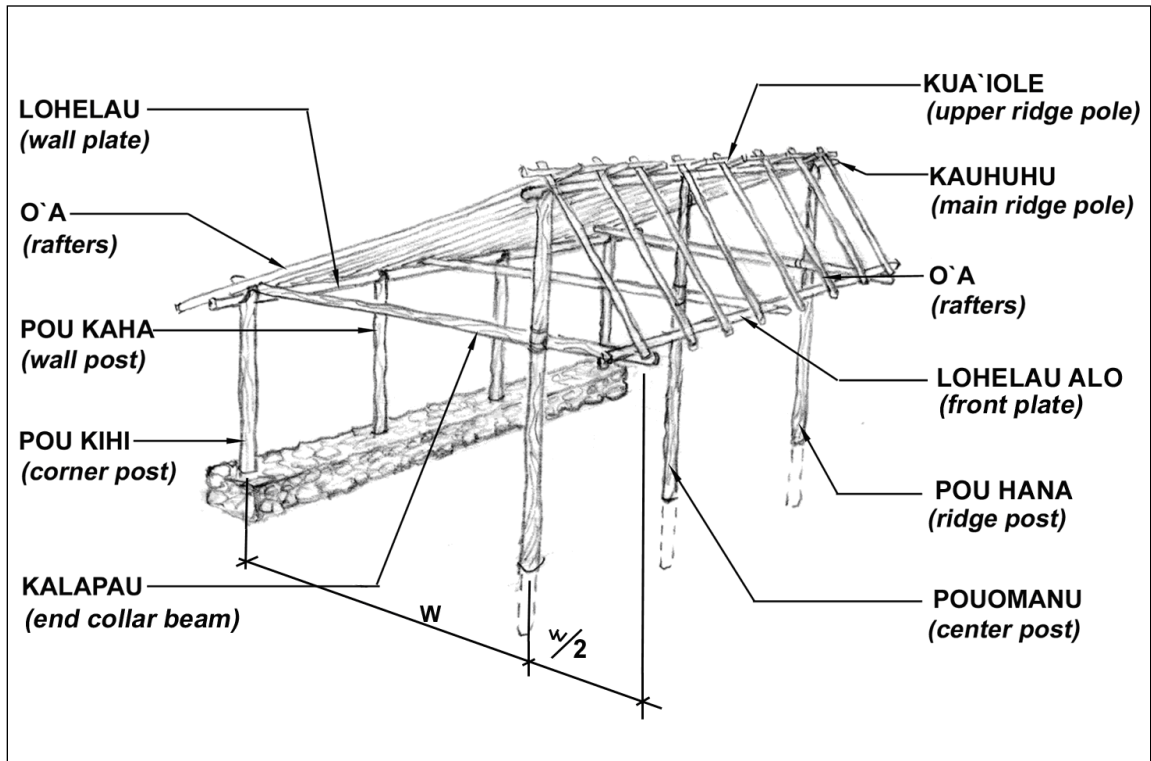
**HALE KU'AI**  
**Shed Style**



**HALE KU'AI**  
**Gable Style**



Framing Schematic 1



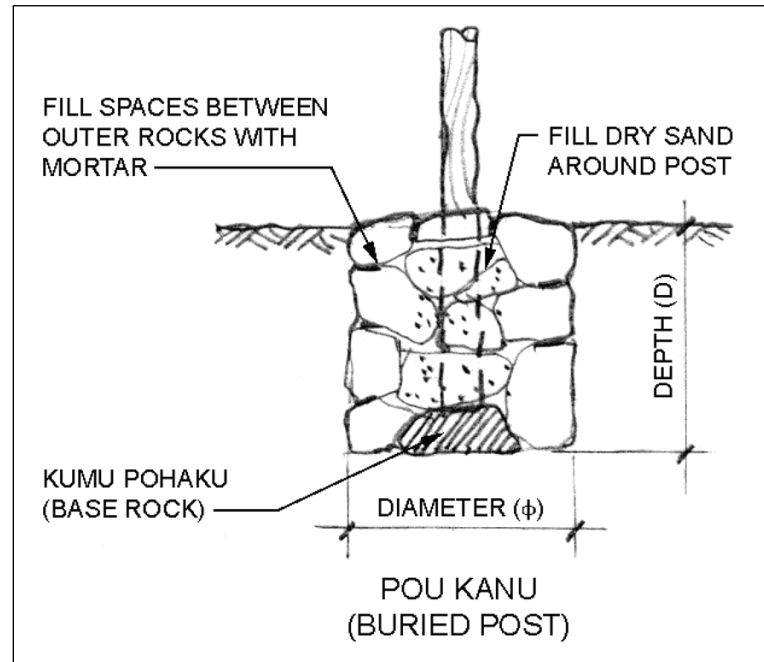
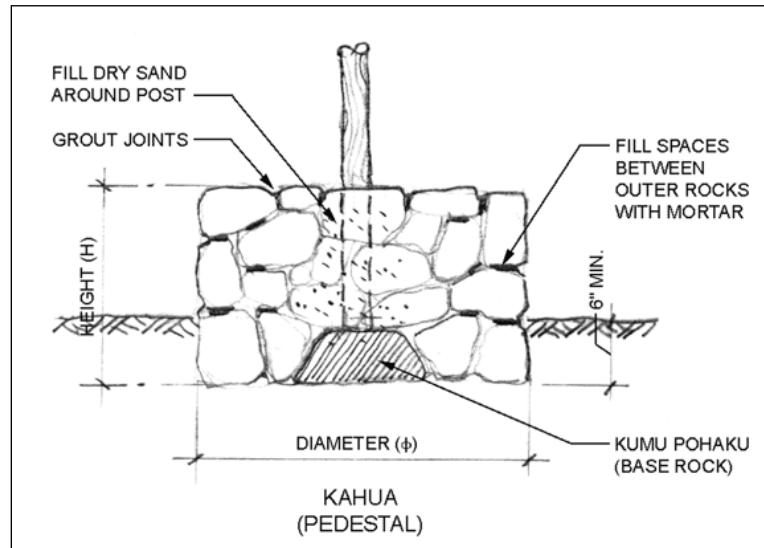
Framing Schematic 2

**Table X402.2(a)**  
**Size and Spacing Requirements for Structural Components used in Hale Ku‘ai**

Size	pou kihi <sup>a</sup>	pou kaha <sup>a</sup>	pou hana <sup>b</sup>	pouo manu <sup>b</sup>	o‘a	kua‘iole & holo	kauhuhu	lohelau	Max. rafter spacing (feet)
(W x L x H)	Minimum Diameter (inches)								
5' x 10' x 5'	4	3	3	4	3	2	3	2	4
9' x 12' x 5'	4	3	3	4	3	2	3½	2	4
12' x 16' x 5'	4½	3½	4	4	3½	2	4	2½	4
14' x 20' x 5'	4½	3½	4	4	3½	2½	4½	2½	4

a The maximum post spacing for pou kihi and pou kaha is five feet.

b The maximum post spacing for pou hana and pouomanu is twelve feet.

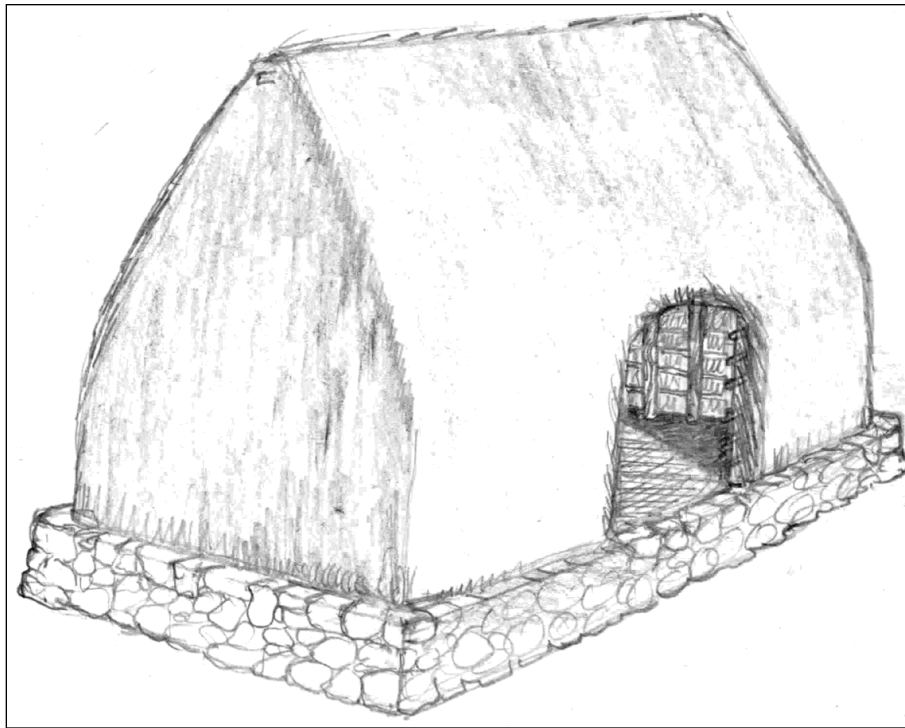




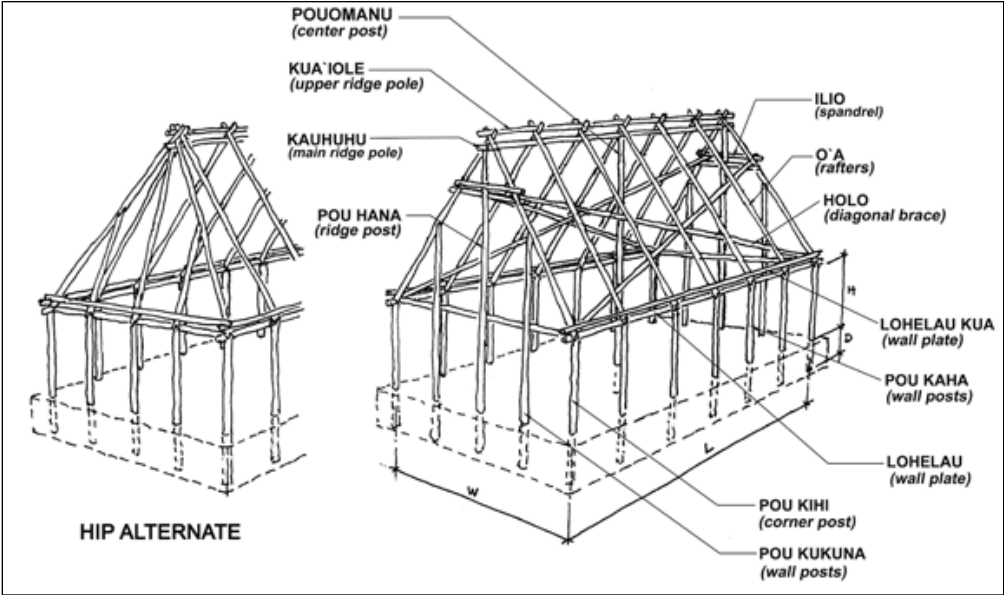
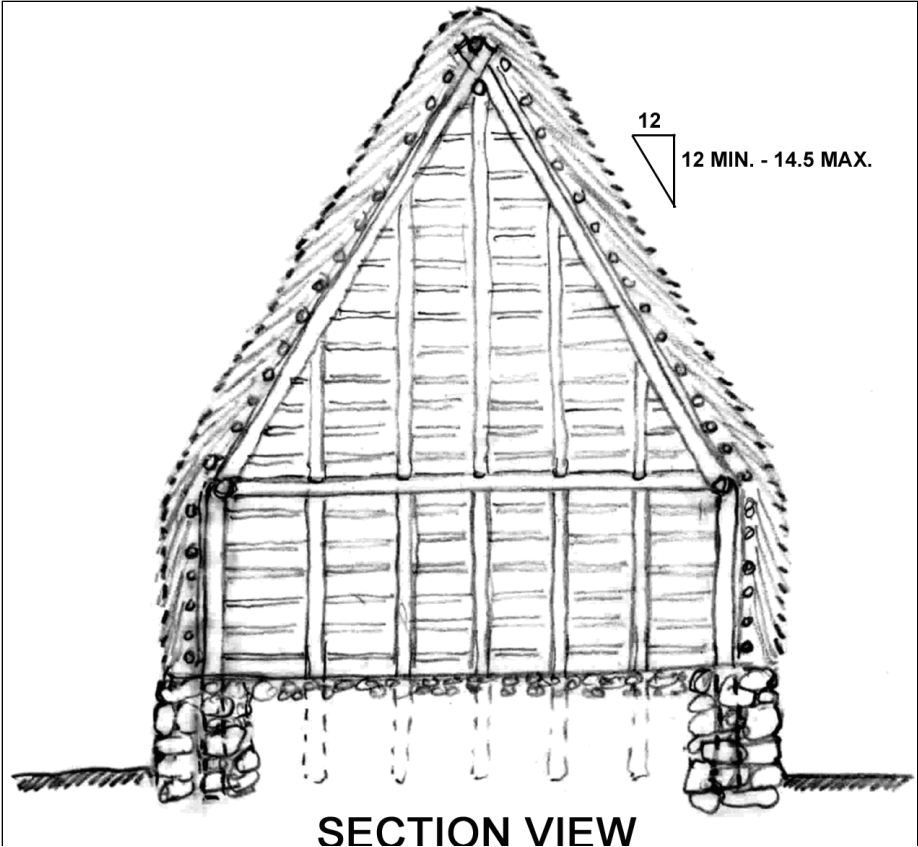
**Table X402.2(b)**  
**Foundation Design for Hale Ku'ai**

Size (W x L x H)	Foundation Type		
	kahua	pa pohaku	pou kanu
	Diameter x Height	Width x Height x Length	Diameter x Depth
5' x 10' x 5'	3'0"φ x 24"H	2'6"W x 2'0"H x 4'0"L	30"φ x 2'6"D
9' x 12' x 5'	3'4"φ x 24"H	2'6"W x 2'0"H x 4'0"L	30"φ x 2'6"D
12' x 16' x 5'	3'6"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'8"D
14' x 20' x 5'	3'8"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'9"D

**402.3 Hale Noa.** Hale Noa shall have at least two openings. One opening shall be at least 3 feet wide and 5 feet high, and the other opening shall be at least 2 feet wide and 3 feet high. Hale Noa shall be designed in accordance with the following schematics and illustrations. Structural components for Hale Noa shall meet the size and spacing requirements in Table X402.3(a). Foundations for Hale Noa shall be designed in accordance with Table X402.3(b).



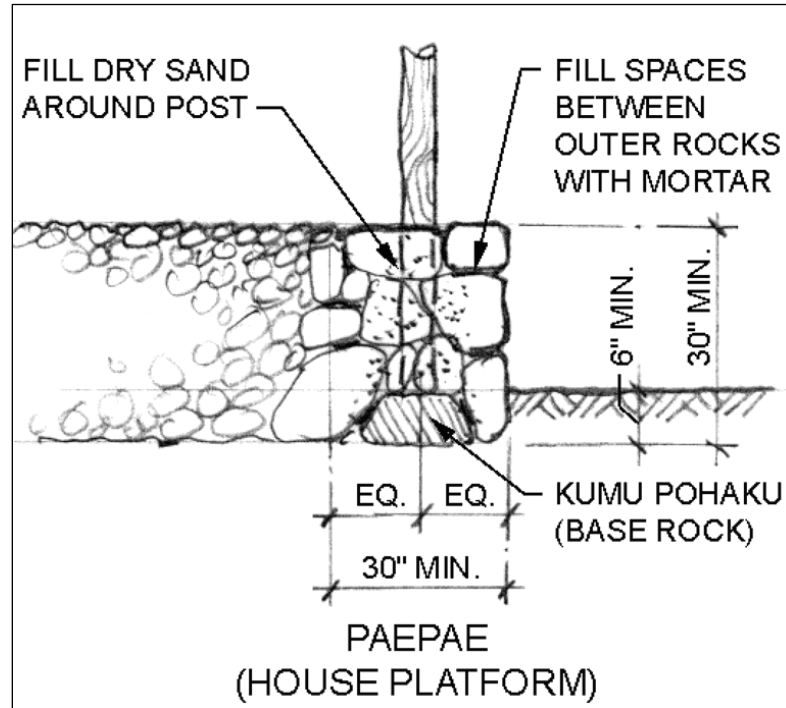
**HALE NOA**



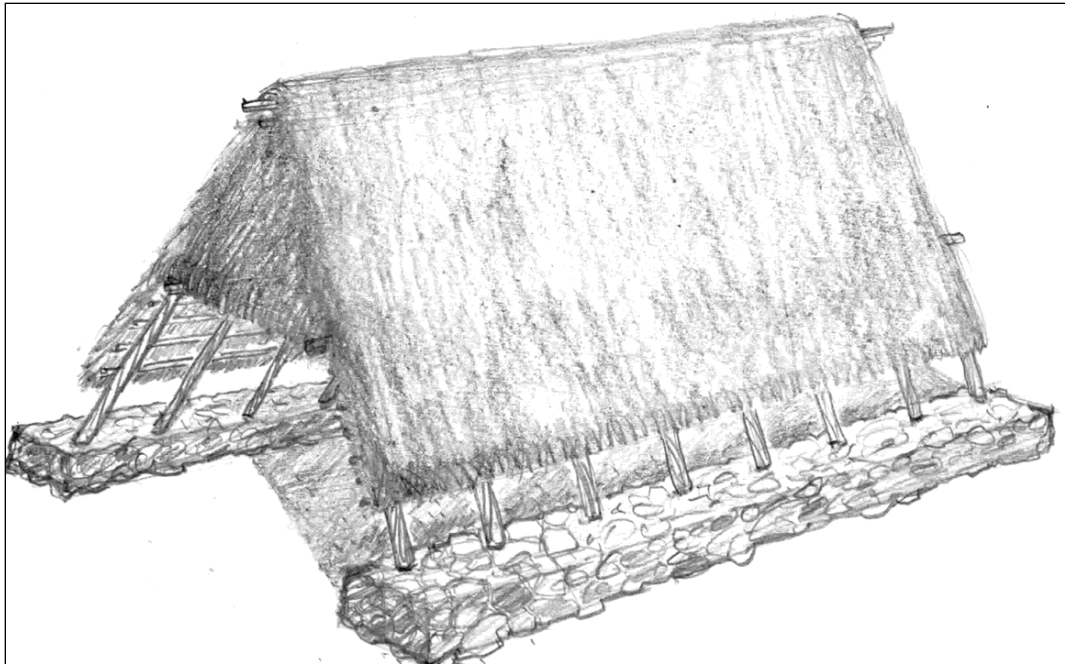
Framing Schematic

**Table X402.3(a)**  
**Size and Spacing Requirements for Structural Components Used in Hale Noa**

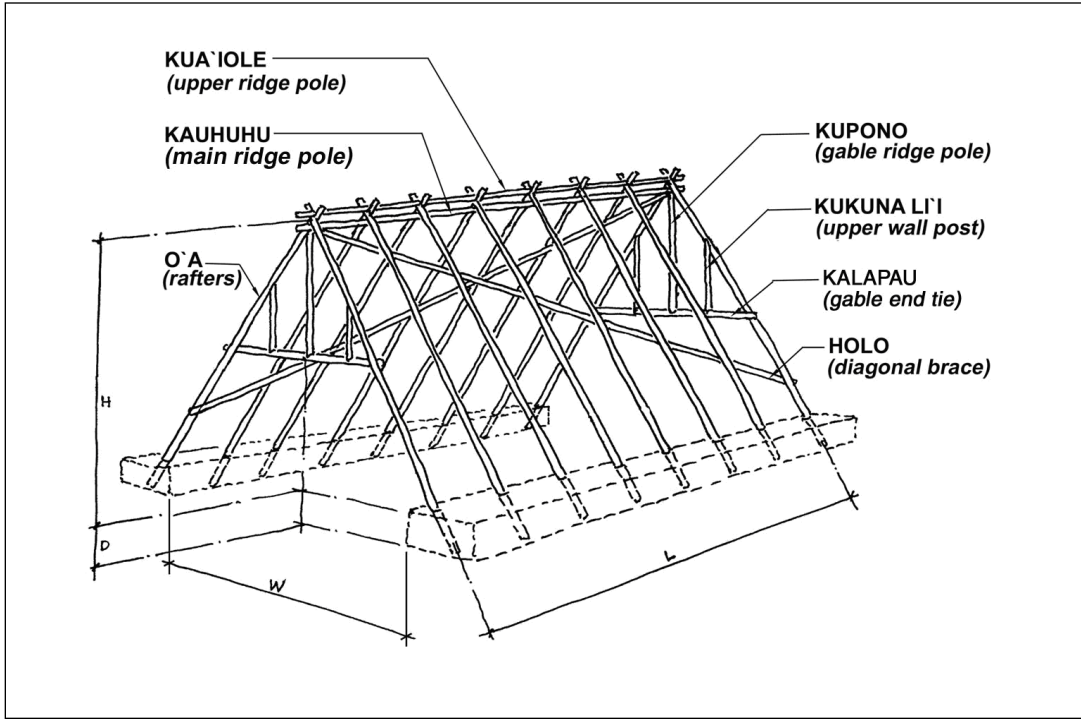
Size W x L x H	pou kihi	pou kukuna & pou kaha	pou hana	pouomanu	o'a	kua'iole & holo	kauhuhu	lohelau	Max. post spacing (feet)	Max. rafter spacing (feet)
Minimum Diameter (inches)										
9' x 12' x 7'	3½	3	4	3	3	2½	3½	2½	6	4
12' x 20' x 7'	4	4½	4	3	3½	2½	3½	2½	6	4
4' x 24' x 7'	5½	4½	4	3	3½	2½	3½	3	6	4



**402.4 Hale Wa'a.** Hale Wa'a shall be designed in accordance with the following schematics and illustrations. Structural components for Hale Wa'a shall meet the size and spacing requirements in Table X402.4.



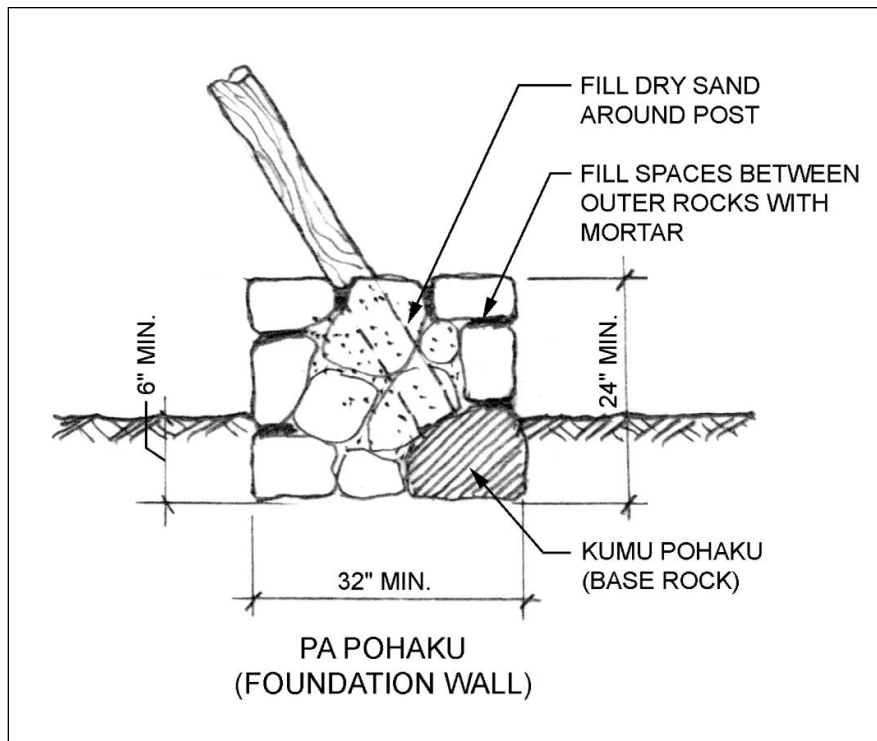
**HALE WA'A**



**Framing Schematic**

**Table X402.4**  
**Size and Spacing Requirements for Structural Components Used in Hale Wa'a**

Size (W x L)	o'a	kua'iole & holo	kauhuhu	Spacing between Rafters	Min. Ridge Height (H)
20' x 60'	4"	3"	4"	4' to 5'	22½'
25' x 60'	5"	3"	4"	4' to 5'	27½'
30' x 60'	5½"	3"	4"	4' to 5'	27½'



(Ord. No. 929, May 23, 2012)

- Sec. 12-2.3 Amendments to the International Residential Code for One- and Two-Family Dwellings.**

The International Residential Code for One- and Two-Family Dwellings, 2006 Edition, is amended as follows:

- (1) Section R101.1 is amended to read:

**R101.1 Title.** These provisions shall be part of the Building Code of the County of Kaua'i, and will be referred to herein as "this code."

- (2) Section R102.4 is amended by revising to read as follows:

**R102.4 Referenced codes and standards.** The codes and standards referenced in this code shall be considered guidelines of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

**R102.4.1 Conflicts with other codes.** If a referenced code conflicts with another applicable law of the jurisdiction, then said applicable law shall prevail over the guidelines in the referenced code.

- (3) Section R102.7 is amended by revising to read as follows:

**R102.7 Existing structures.** Buildings in existence at the time of the adoption of this code may have their existing use or occupancy continued if such use or occupancy was legal at the time of the adoption of this code, provided such continued use does not constitute a hazard to the general safety and welfare of the occupant and the public.

- (4) Section R103 is amended to read:

### **SECTION R103 - ORGANIZATION AND ENFORCEMENT**

**R103.1 General.** Code enforcement agency shall be in accordance with International Building Code Section 103.

- (5) Section R104.10.1 is deleted.

- (6) Section R105 is amended to read:

### **SECTION R105 - PERMITS**

**R105.1 General.** A building permit is required to perform work covered by this code as provided in Chapter 12, Kaua'i County Code 1987, as amended.

- (7) Sections R106, R107 and R108 are deleted in their entirety.

- (8) Section R109 is amended to read:

### **SECTION R109 - INSPECTIONS**

**R109.1 General.** Inspections shall be in accordance with International Building Code Section 109.

- (9) Section R110 is amended to read:

### **SECTION R110 - CERTIFICATE OF OCCUPANCY**

**R110.1 General.** Certificate of Occupancy shall be in accordance with the International Building Code, Section 110.

- (10) Section R112 is amended to read:

### **SECTION R112 - BOARD OF APPEALS**

**R112.1 General.** Board of Appeals shall be in accordance with International Building Code Section 112.

- (11) Section R113 is amended to read:

### **SECTION R113 - VIOLATIONS AND PENALTIES**

**R113.1 General.** Violations and penalties shall be in accordance with International Building Code Section 113.

- (12) Section R202 is amended to read:

- (a) The following paragraph is added before the definition of "ATTIC":

ASSISTANTS. When the term "assistants" is used in this code, it shall be construed to mean the authorized representatives of the Building Official.

- (b) The following paragraph is added before the definition of "BACKFLOW, DRAINAGE":

**AUTHORIZED REPRESENTATIVES.** When the term “Authorized Representatives” is used in this Code, it shall be construed to mean all building plans examiners, building inspectors and their supervisors designated as subordinate officers to the Building Official in enforcement of this Code.

- (c) By amending the definition of “BUILDING, EXISTING” to read:

BUILDING, EXISTING is a building for which legal building permits has been issued, or one which complied with the Building Code in effect at the time the building was erected.

- (d) By amending the definition of “BUILDING OFFICIAL” to read:

BUILDING OFFICIAL shall mean the County Engineer or his authorized representative.

- (e) The following paragraphs added before the definition of “CEILING HEIGHT”:

CARPORT is private garages, which is at least 100 percent open on one side and with 50 percent net openings on another side or which is provided with an equivalent of such openings on two or more sides.

A private garage which is 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the Building Official.

- (f) The following paragraph added before the definition of “FENESTRATION”:

FAMILY shall be as defined in the Comprehensive Zoning Ordinance of the County except that an adult residential care home, a special treatment facility, or other similar facility shall be limited to five persons in order to be considered under this code.

- (g) The following paragraph added before the definition of “HORIZONTAL BRANCH, DRAINAGE”:

HISTORICAL BUILDINGS are buildings officially listed on the State of Hawai‘i or National Register of Historical Places.

- (h) By amending the definition of “KITCHEN” to read:

KITCHEN shall be as defined in the Comprehensive Zoning Ordinance.

- (i) By amending the definition of “PERSON” to read:

PERSON. Any individual, firm partnership, association, corporation or utility company; shall include each and every owner of any whole or fractional interest in the property concerned, whether in fee, any lesser freehold or tenancy at will.

- (j) By amending the definition of “Wind-Borne Debris Region” to read:

WIND-BORNE DEBRIS REGION. Portions of hurricane-prone regions that are within one (1) mile (1.61 km) of the coastal mean high water line where the effective basic wind speed is 110 mph (48 m/s) or greater; or portions of hurricane-prone regions where the effective basic wind speed is 120 mph (53 m/s) or greater.

- (13) Section R301.2 is amended to read:

**R301.2 Climatic and Geographic Design Criteria.** Wind, seismic, and flood hazard design criteria shall be in accordance with the International Building Code.

- (14) Section R301.2.1 is added to Chapter 3 to read as follows:

**SECTION R301.1.2.1 COMPLETE LOAD PATH AND UPLIFT TIES**

**R301.1.2.1 General.** Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of galvanized steel or other approved corrosion-resistant material not less than 0.040 inch (1.01 mm) nominal thickness. Uplift resistance shall be in accordance with Table R802.11.

- (15) Section R309.5 is amended to read:

**R309.5 Flood Hazard Areas.** See Chapter 15, Article 1, Floodplain Management, K.C.C., 1987 as amended.

- (16) Section R310.1.1 is amended by amending the exception to read:

**Exceptions:**

1. Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465m<sup>2</sup>).
2. Glass jalousie bladed windows may be used for emergency escape or rescue.

- (17) Section R319 is amended to read:

**SECTION R319 - PROTECTION AGAINST DECAY**

**R319.1 General.** Protection against decay shall be in accordance with International Building Code Section 2303.1.8 and 2304.11.

- (18) Section R320 is amended to read:

**SECTION R320 - PROTECTION AGAINST TERMITES**

**R320.1 General.** Protection against termites shall be in accordance with International Building Code Section 2303.1.8 and 2304.11.

- (19) Section R321 is amended to read:

**SECTION R321.1 SITE ADDRESS**

**R321.1 Premises Identification.** Premises identification shall be in accordance with International Building Code Section 501.2.

- (20) Section R322 is amended to read:

**SECTION R322 ACCESSIBILITY**

**R322.1 Scope.** Conformance to all of the design and construction requirements for persons with disabilities shall be in accordance with the International Building Code Chapter 11, as amended.

- (21) Section R323 is amended to read:

**R323.1 General.** Buildings and structures constructed in flood hazard areas shall be in accordance with Chapter 15, Article 1, Floodplain Management, K.C.C., 1987 as amended.

- (22) Section R325 is added to Chapter 3 to read as follows:

**R325 Hawai'i Residential Safe Room**

**R325.1 Performance-Based Design Criteria.** The Residential Safe Room shall meet the minimum performance specifications of Sections R325.1.1 through R325.9.

**R325.1.1 Intent and Scope.** The intent of the Residential Safe Room is to temporarily provide an enhanced protection area, fully enclosed within a dwelling or within an accessory structure to a



residence, which is designed and constructed to withstand the wind pressures, windborne debris impacts, and other requirements of this Section.

**R325.1.2 Alternative Standards.**

1. **Manufactured Safe Room Designs Subject to Approval.** A manufactured safe room or safe room kit may be substituted if documentation is submitted and approved by the Building Official. The safe room shall be engineered, tested, and manufactured to meet or exceed the criteria of this Section.
2. **FEMA In-Residence Shelter Designs Permitted.** It shall be permissible to build FEMA In-Residence Shelters of up to 64 square feet of floor area with walls up to 8 feet long that are built in accordance with construction details of FEMA 320.

**R325.2 Site Criteria.** Residential Safe Rooms shall not be constructed within areas subject to stream flooding, coastal flooding or dam failure inundation within any of the following areas:

1. FEMA Special Flood Hazard Areas (SFHA) subject to rainfall runoff flooding or stream or flash flooding;
2. Coastal zones “V” or “A” identified in the Flood Insurance Rate Map (FIRM) issued by FEMA for floodplain management purposes, in which the flood hazard are tides, storm surge, waves, tsunamis, or a combination of these hazards;
3. Areas subject to dam failure inundation as determined by the Department of Land and Natural Resources.

**R325.3 Maximum Occupancy.** The safe room is permitted to be used for a maximum occupancy based on at least 15 square feet per person with a maximum of 8 persons in a room of up to 128 square feet of floor area.

**R325.4 Provisions for Exiting.** The room shall be equipped with an inward-swinging door and an impact-protected operable window suitable for a means of alternative exiting in an emergency.

**R325.5 Design for Dead, Live, Wind, Rain, and Impact Loads.**

**R325.5.1 Structural Integrity Criteria.**

1. The safe room shall be built with a complete structural system and a complete load path for vertical and lateral loads caused by gravity and wind.
2. The building that the safe room is built within shall be assumed to be destroyed by the storm and shall not be taken as offering any protective shielding to the safe room enclosure.
3. The ceiling structure and wall shall be capable of supporting a superimposed debris load of the full weight of any building floors and roof above, but not less than 125 psf.
4. The safe room enclosure shall be capable of simultaneously resisting lateral and uplift wind pressures corresponding to a 160 mph 3-second peak gust, determined in accordance with ASCE Standard 7, Minimum Design Loads for Buildings and Other Structures, calculated using load and importance Factors of 1.0. The site exposure factor shall be based on exposure C. The gust factor and the directionality factor shall be taken as 0.85. Topographic wind amplification caused by mountainous terrain shall be considered in accordance with the building code. Internal pressure shall be determined in accordance with ASCE - 7.

5. The safe room shall be anchored to a foundation system capable of resisting the above loading conditions.

**R325.5.2 Windborne Debris Impact Protection of Building Enclosure Elements.** The entire enclosure of the safe room, including all walls, ceilings, and openings, fixed or operable windows, and all entry doors into the safe room, shall meet or exceed Level D requirements of ASTM E 1996 (Table R325.5-1). Any wall or ceiling penetration greater than 4 square inches shall be considered an opening.

**Exception:** Electrical outlet boxes and interior lighting switches not penetrating more than 2.5-inches into the interior wall surface and a plumbing piping or conduit not greater than 1.5-inch in diameter shall be exempted from this requirement.

**R325.5.3 Cyclic Pressure Loading of Glazing and Protective Systems.** Impact protective systems shall meet the ASTM E 1996 cyclic pressure requirement for the loading given in Table R325.5-1.

- (23) Section R326 is added to read:

### **SECTION R326 - COMPLETE LOAD PATH AND UPLIFT TIES**

**R326.1 Purpose.** The purpose of this Section is intended to promote public safety and welfare by reducing the risk of wind induced damages to conventional light-frame construction.

**R326.2 Scope.** This section applies to regular shape buildings, which have a roof structural member spanning 32 feet (9.75 m) or less, are not more than three stories in height are of conventional light-frame construction.

**Exception:** Detached carports, garages, workshops, storages and similar accessory buildings to Group R, Division 3 Occupancies not exceeding 600 square feet (55.7m<sup>2</sup>) need only comply with the roof-member-to-wall-tie requirements of this Section.

**R326.3 Definitions.** For the purposes of this Section, certain terms are defined as follows:

**CORROSION RESISTANT or NONCORROSIVE** is material having a corrosion resistance equal to or greater than a hot-dipped galvanized coating of 1.5 ounces of zinc per square foot (4g/m<sup>2</sup>) of surface area.

**R326.4 General.** Other methods may be used, provided a satisfactory design is submitted showing compliance with the provisions of this Section and other applicable portions of this code.

In addition to the other provisions of this Section, foundations for buildings in areas subject to wave action or tidal surge shall be designed in accordance with approved national standards.

When an element is required to be corrosion resistant or non-corrosive, all of its parts, such as screws, nails, wire, dowels, bolts, nuts, washers, shims, anchors, ties, and attachments, shall also be corrosion resistant or noncorrosive.

Blocking, bridging, straps approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of galvanized steel and other approved corrosion-resistant or noncorrosive material installed accordingly to manufactured specifications.

Uplift tie straps shall be spaced not more than 48 inches (1219 mm) on center to create the complete load path. Uplift tie straps shall meet the requirements of R802.11.

**R326.5 Walls to Foundation Tie.** Exterior walls shall be tied to a continuous foundation, or an elevated foundation system in accordance with Section R324.6.

**R326.5.1 Sill and Foundation Tie.** Foundation plates resting on concrete or masonry foundations shall be bolted to the foundation with not less than ½-inch diameter (13mm) anchor bolts with 7-inch minimum (178 mm) embedment into the foundation, the maximum spacing of anchor bolts shall be 4 feet (1219 mm) on center.

**R326.5.2 Floor-to-Foundation Tie.** The lowest level exterior wall studs shall be connected to the foundation sill plate or an approved elevated foundation system with bent tie straps spaced not more than 48 inch (1219 mm) on center.

**R326.5.3 Wall Framing Detail.** The spacing of 2-inch-by-4-inch studs (51 mm x 102 mm) in exterior wall shall not exceed 16 inches (406 mm) on center. Mechanical fasteners complying with this Section shall be installed as required to connect studs to the sole plates, foundation sill plate and top plate of the wall.

Interior braced wall lines shall be installed approximately perpendicular to the exterior wall when the length of the structure exceeds the width. The maximum distance between these partitions shall not exceed the width of the structure. Interior braced wall lines shall be securely fastened to the exterior wall at the point of intersection with fasteners. The interior braced wall lines shall be covered on both sides by materials as described in Section R324.5.4.

**R326.5.4 Wall Sheathing.** All exterior walls and required interior braced wall lines shall be sheathed at each face. The total width of sheathed wall elements shall not be less than 50 percent of the exterior wall length or 60 percent of the width of the building for required interior braced wall lines. The exterior wall sheathing or covering shall extend from the foundation sill plate or girder to the top plates at the roof level and shall be adequately attached thereto.

A sheathing wall element not less than 4 feet (1219 mm) in width shall be installed at each corner or as near thereto as possible (not to exceed 12.5 feet). There shall not be less than one 4-foot (1219 mm) sheathed wall element for every 20 feet (6096 mm) or fraction thereof of wall length.

**R326.5.5 Floor-to-Floor Tie.** Upper-level exterior wall studs shall be aligned and connected to the wall studs below and the roof ties above with a tie strap.

**R326.5.6 Roof-Members-to-Wall Tie.** Tie straps shall be provided from the side of the roof-framing member to the exterior studs, posts or other supporting members below the roof. The wall studs to which the roof-framing members are tied shall be aligned with the roof-framing member.

All intermediate rafters shall have tie straps and tied to the exterior plate with an approved galvanized steel connector and each connector shall be installed accordingly to manufacture specifications.

The eave overhang shall not exceed 3 feet (914 mm) unless an analysis is provided showing that the required resistance is provided to prevent uplift.

Where openings exceeds 6 feet (1829 mm) in width, the required tie straps shall be doubled at each edge of the opening and connected to a double full-height wall stud. When openings exceed 12 feet in width, ties designed to prevent uplift shall be provided.

**Exception:** The opening width may be increased to 16 feet (4877 mm) for garages, carports and accessory buildings to Group R, Division 3 Occupancies when constructed in accordance with the following:

1. Approved column bases shall be a minimum 3/16-inch (4.8 mm) steel plate embedded not less than 8 inches (203 mm) into the concrete footing and connected to a minimum 4-inch-by-4-inch (102 mm by 102 mm) wood post with two 5/8-inch-diameter (15.9 mm) through bolts.
2. Beams over openings shall be connected to minimum 4-inch-by-4-inch (102 mm by 102 mm) wood posts below with an approved 3/16-inch (4.8 mm) steel post cap with two 5/8-inch-diameter (15.9 mm) through bolts and to the beams.

**R326.5.7 Ridge Ties.** Opposing rafters shall be aligned at the ridge and be connected at the rafters with a tie strap.

**R326.5.8 Roof Sheathing.** Anchor ties shall be spaced to support not more than 1<sup>5</sup>/<sub>8</sub> square feet (860 mm<sup>2</sup>) of wall area but not more than 12 inches (305 mm) on center vertically.

**R326.5.9 Roof Sheathing.** Solid roof sheathing shall be applied and shall consist of a minimum 1-inch-thick (25 mm) nominal lumber applied diagonally or a minimum 15/32-inch-thick (11.9 mm) wood structural panel or particleboard or other approved sheathing applied with the long dimension perpendicular to supporting rafters. Sheathing shall be nailed to roof framing in an approved manner. The end joints of wood structural panels or particleboard shall be staggered and shall occur over blocking, rafters or other supports.

**R326.5.10 Gable-End Walls.** The roof overhang at gabled ends shall not exceed 2 feet (610 mm) unless an analysis is showing that the required resistance to prevent uplift is provided.

Gable-end wall studs shall be continuous between points of lateral support, which are perpendicular to the plane of the wall.

Gable-end wall studs shall be attached with approved mechanical fasteners at the top and bottom.

**R326.5.11 Roofing Covering.** Roof covering shall be approved and shall be installed and fastened in accordance with this code and the manufacturer's instructions. Asphalt shingles with self-seal strips shall be fastened with a minimum of six fasteners per shingle.

## **R326.6 Elevated Foundation.**

**R326.6.1 General.** When approved, elevated foundations supporting not more than one story and meeting the provisions of this Section may be used. The Building Official may require a foundation investigation.

**R326.6.2 Material.** All exposed wood-framing members shall be treated wood. All metal connectors and fasteners used in exposed locations shall be corrosion-resistant or noncorrosive steel.

**R326.6.3 Wood Piles.** The spacing of wood piles shall not exceed 8 feet (2438 mm) on center. Square piles shall not be less than 10 inches (254 mm) and tapered piles shall have a tip of not less than 8 inches (203 mm). Ten-inch-square (64 516 mm<sup>2</sup>) piles shall have a minimum embedment length of 10 feet (3048 mm) and shall project not more than 8 feet (2438 mm) above undisturbed ground surface. Eight-inch (203 mm) taper piles shall have a minimum embedment length of 14 feet (4267 mm) and shall project not more than 7 feet (2134 mm) above undisturbed ground surface.

**R326.6.4 Girders.** Floor girders shall be solid sawn timber, built-up 2-inch-thick (51 mm) lumber or trusses. Splices shall occur over wood piles. The floor girders shall span in the direction parallel to the potential floodwater and wave action.

**R326.6.5 Connections.** Wood piles may be notched to provide a shelf for supporting the floor girders. The total notching shall not exceed 50 percent of the pile cross section. Approved bolted connection

with ¼-inch (6.4 mm) corrosion-resistant or noncorrosive steel plates and ¾-inch-diameter (19mm) bolts shall be provided. Each end of the girder shall be connected to the piles using a minimum of two ¾-inch-diameter (19 mm) bolts.

- (24) Section R611.9 is amended to read as follows:

**R611.9 ICF wall to top sill plate (roof) connections.** Wood sill plates attaching roof framing to ICF walls shall be anchored with minimum 1/2-inch (13 mm) diameter anchor bolt embedded a minimum of 7 inches (178 mm) and placed at 6 feet (1829 mm) on center in accordance with Figure R611.9. Anchor bolts shall be located in the cores of waffle-grid and screen-grid ICF walls. Roof assemblies subject to wind uplift pressure of 20 pounds per square foot (1.44 kPa) or greater as established in Table R301.2(2) shall have rafter or truss ties provided in accordance with Table R802.11.

- (25) Section R614 is amended to read:

#### **SECTION R614 - SINGLE-WALL CONSTRUCTION**

**R614.1 General.** This section is intended for conventional light-framed construction. Other methods may be used provided a satisfactory design is submitted showing compliance with other provision of this Code.

Conventional construction may be used for repairs and addition to existing to conventionally constructed structures, provided that those repairs and additions requiring the seal of a duly licensed professional registered structural engineer or architect as required by Chapter 464 of the Hawai'i Revised Statutes as amended shall be designed to comply with other provision of this Code.

**R614.2 Walls Without Studs.** For Type V-B buildings, single wall construction without studs may be used in accordance with the section for repairs or additions to existing buildings of single wall construction.

One-story and the uppermost story of wood frame type V-B buildings or structures may be of single wall construction with boards of thickness specified in this Section, without studs, when requirements of this Section are met. Floor to ceiling height shall not exceed 8 feet.

Any provisions of this Code to the contrary notwithstanding, studding of not less than 2 inches by 3 inches may be used on one-story buildings of double wall construction. Studding shall not be spaced more than 16 inches on center.

When posts support wood frame dwellings, 2-inch by 4-inch foundation bracing shall be provided.

For one-story, conventional residential buildings or structures the local practice of using foundation blocks with termite shields will be acceptable in interior areas except in flood hazard districts and developments. Design shall comply with the requirements of the Floodplain Management Ordinance, County of Kaua'i.

#### **R614.3 Boards for Single Wall Construction.**

**R614.3.1. One and One-Eighth Inch Boards.** Single wall construction with boards of 1-1/8 inch net thickness are not required to have girts.

**R614.3.2. One-Inch Boards.** Where single wall construction is with boards of 1-inch net thickness, no girt is required provided approved stiffeners for any section of such wall is spaced not more than 10 feet along the wall.

**R614.3.3 Three-Fourths-Inch Boards.** Single wall construction with boards of 3/4-inch net thickness shall have girts and cross partitions at least every 30 feet.

**R614.3.4 Eleven-Sixteenths-Inch Boards.** Single wall construction with boards of 11/16-inch net thickness shall be limited to the following conditions: (A) the span between load bearing walls shall not exceed 24 feet; (B) the dead load on such walls shall not exceed 150 pounds per lineal foot; (C) girts shall be provided; (D) there shall be approved stiffeners at least every 10 feet along such wall; and (E) any openings in such walls for windows and doors shall have full-height jambs or studs where the girt is not continuous.

**R614.4 Approved Stiffeners.** Approved stiffeners shall be studs of at least 2 inches by 4 inches, full-height window or doorjambs, posts, walls or partitions at right angle to the section of wall under construction.

**R614.5 Girts.** Girts for single wall construction shall be not less than 2-inch by 6-inch belt course or other approved strengthening about mid height between the floor and the ceiling on all exterior walls.

- (26) Section R802.10.5 is amended to read:

**R802.10.5 Truss to wall connection.** Trusses shall be connected to wall plates by the use of approved connectors having a resistance to uplift of not less than 400 pounds and shall be installed in accordance with the manufacturer's specifications. For roof assemblies subject to wind uplift pressures as established in Table R301.2(2), adjusted for height and exposure per Table R301.2(3), see Section R802.11.

- (27) Section R802.11.1 is amended to read:

**R802.11.1 Uplift resistance.** Roof assemblies which are subject to wind uplift pressures shall have roof rafters or trusses attached to their supporting wall assemblies by connections capable of providing the resistance required in Table R802.11. Wind uplift pressures shall be determined using an effective wind area of 100 square feet (9.3 m<sup>2</sup>) and Zone 1 in Table R301.2(2), as adjusted for height and exposure per Table R301.2(3). A continuous load path shall be designed to transmit the uplift forces from the rafter or truss ties to the foundation.

- (28) Section R804.4 is amended to read:

**R804.4 Roof tie-down.** Roof assemblies subject to wind uplift pressures as established in Table R301.2(2), shall have rafter-to-bearing wall ties provided in accordance with Table R802.11.

- (29) Section R806.5 is added to read:

**R806.5 Unvented Attic Spaces.** The attic space shall be permitted to be unvented when the design professional determines it would be beneficial to eliminate ventilation openings to reduce salt-laden air and maintain relative humidity 60% or lower to:

1. Avoid corrosion to steel components,
2. Avoid moisture condensation in the attic space, or
3. Minimize energy consumption for air conditioning or ventilation by maintaining satisfactory space conditions in both the attic and occupied spaces below.

- (30) The entire Chapter 11 is amended to read:

**Chapter 11 - ENERGY EFFICIENCY**

**N1101. General.** The energy efficiency related requirements for the design and construction of buildings related by this Code shall comply with Chapter 13 Solar Energy System, International Building Code and Article 6, Chapter 12, Building Code, Kaua‘i County Code 1987 as amended.

Deleting Chapters 12 to 42 from the International Residential Code for One- and Two-Family Dwellings except for Chapter 23, Solar Systems, is by reference incorporated and made part of this code. The following chapters are deleted:

Chapter 12	Mechanical Administration
Chapter 13	General Mechanical System Requirements
Chapter 14	Heating and Cooling Equipment
Chapter 15	Exhaust Systems
Chapter 16	Duct Systems
Chapter 17	Combustion Air
Chapter 18	Chimneys and Vents
Chapter 19	Special Fuel-Burning Equipment
Chapter 20	Boilers and Water Heaters
Chapter 21	Hydronic Piping
Chapter 22	Special Piping and Storage Systems
Chapter 24	Fuel Gas
Chapter 25	Plumbing Administration
Chapter 26	General Plumbing Requirements
Chapter 27	Plumbing Fixtures
Chapter 28	Water Heaters
Chapter 29	Water Supply and Distribution
Chapter 30	Sanitary Drainage
Chapter 31	Vents
Chapter 32	Traps
Chapter 33	General Requirements
Chapter 34	Electrical Definitions
Chapter 35	Services
Chapter 36	Branch Circuit and Feeder Requirements
Chapter 37	Wiring Methods
Chapter 38	Power and Lighting Distribution
Chapter 39	Devices and Luminaires
Chapter 40	Appliance Installation
Chapter 41	Swimming Pools
Chapter 42	Class 2 Remote-Control, Signaling and Power-Limited Circuits.

- (31) Section M2301.1 is amended by adding a second sentence:

Solar energy collectors that function as building components shall comply with the applicable provisions of the code. Collectors located above or upon a roof and functioning as building components shall not reduce the required fire-resistive or fire-retardancy classification of the roofing-materials.

- (32) Section M2301.2.1 is amended by adding Sections M2301.2.1.1 through M2301.2.1.5:

**M2301.2.1.1 Solar systems for one- and two-family dwellings.** Access to residential systems for one- and two-family dwellings shall be provided in accordance with Sections M2301.1.2 through M2301.5.

**M2301.2.1.2 Residential buildings with hip roof layouts.** Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

**Exception:** On roofs with slopes of two units vertical in 12 units horizontal (2:12) or less, a 3-foot-wide clear pathway between the panel and sides, top, or eave is required on two sides.

**M2301.2.1.3 Residential buildings with a single ridge.** Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/modules are located.

**Exception:** On roofs with slopes of two units vertical in 12 units horizontal (2:12) or less, a 3-foot-wide clear pathway between the panel and sides, top, or eave is required on two sides.

**M2301.2.1.4 Residential buildings with roof hips and valleys.** Panels/modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

**Exception:** On roofs with slopes of two units vertical in 12 units horizontal (2:12) or less, a 3-foot-wide clear pathway between the panel and sides, top, or eave is required on two sides.

**M2301.2.1.5 Residential buildings smoke ventilation.** Panels/modules installed on residential buildings shall be located no higher than 3 feet (914 mm) below the ridge in order to allow for fire department smoke ventilation operations.

- (33) Section 2301.5 is amended by replacing the word “comply” with “reference” at the end of the sentence.

- (34) Section 12-3.10, Article 3 is amended to read:

**12-3.10 Violation and Penalties.** For violations and penalties, see Section 113, Chapter 1 Administration, International Building Code.

- (35) Section 12-4.4, Article 4 is amended to read:

**12-4.4 Building Permit Fee.** A fee for each building permit shall be paid to the Building Official as provided in this Code. The fee will be based on valuation of the factory built house structure and trailer home in place and the value of all additions or alterations to be made, including the value of carports, fences, retaining walls, etc.



(36) Section 12-4.5(c), Article 4 is amended to read:

- (b) All factory build housing, structure and trailer home shall conform to: the applicable standards and requirements of the Department of Health, State of Hawai'i, including Chapter 11 (Sanitation), Title 11, Administrative Rules of the Department of Health, as updated and amended; Chapter 62, Title 11, Administrative Rules of the Department of Health, as wastewater treatment works; the standards and specifications contained in the International Mechanical Code, as updated and amended, published by the International Code Council, Incorporated; and the requirements of Chapter 464 of the Hawai'i Revised Statutes.

(37) Section 12-4.11, Article 4 is amended to read:

**12-4.11 Violations and Penalties.** For violations and penalties, see Section 113, Chapter 1 Administration, International Building Code.

(Ord. No. 929, May 23, 2012)

### • **Article 3. Relocation of Buildings**

#### • **Sec. 12-3.1 Applicability.**

The provisions of Section 106.3.1 and 106.3.2 of the Uniform Building Code, as amended to the contrary notwithstanding, no person shall move or cause to be moved any buildings or structure into or within the County without complying with the provisions of this Article; provided, however, any movement of a building or structure which is confined within the boundaries of a single lot shall not be subject to this Article, but shall be subject to Section 106 and other applicable provisions of the Uniform Building Code, as amended; National Electrical Code, as amended; and Uniform Plumbing Code, as amended. (Ord. No. 929, May 23, 2012)

#### • **Sec. 12-3.2 Application for a Relocation Permit.**

Any person intending to move any building or structure shall apply to the Building Official for a relocation permit in writing upon a form furnished by the Building Official and shall set forth such information as the Building Official may reasonably require in order to carry out the purpose of this Article. (Ord. No. 929, May 23, 2012)

#### • **Sec. 12-3.3 Performance Security.**

- (a) To secure faithful performance of any relocation permit obligations, the applicant or by any person on behalf of the applicant or his/her authorized agent shall comply to all requirements in Chapter 16, Traffic Code, Kaua'i County Code 1987, as amended and other requirements mentioned in Section 291-34 and Section 291-35, Hawai'i Revised Statutes as amended.
- (b) A certificate of an insurance carrier shall be filed with the Police Department, certifying that there is a Comprehensive Automobile Liability Insurance Policy covering any relocation permit obligations as required by Chapter 16, Traffic Code, Kaua'i County Code 1987 as amended.
- (c) Upon the performance of a relocation permit obligation, the applicant or by any person on behalf of the applicant or his/her authorized agent, shall be responsible for all repairs or pay for any property owned by the County or by others which has been damaged in the process of moving such building or structure. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.4 Issuance of Permit.**

If the work described in the application for permit and in the plans and specifications submitted therewith conform to the requirements of said code and other pertinent laws and ordinances, and the permit or permits as required under the provisions of Chapter 16 Kaua'i Traffic Code has or have been issued by the State Director of Transportation and/or the County Engineer, the Building Official shall issue a relocation permit. The plans and specifications after approval by the Building Official shall not be changed, modified, or altered without authorization from the Building Official and all work shall be done in accordance with the approved plans and specifications. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.5 Police Escorts.**

- (a) The applicant shall apply to the Police Department of the County for escort services of a police officer. The applicant shall bear the costs of such services.
- (b) In addition to any other requirement which may be provided by law for the submission of reports in the event of any damage to property resulting from the moving of any building or structure, the police officer assigned to provide escort service shall submit a report to the Building Official of any such damage. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.6 Duration and Extension of Time.**

All work for which a relocation permit is issued under the provisions of this Article shall be started within 180 days of the date of issuance of the permit, unless extended for good cause by the Building Official. Any request for extension shall be made not less than 15 days prior to the date of expiration of the permit. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.7 Denial of Permit.**

No permit shall be issued to move any building or structure which does not (1) comply with other pertinent codes and ordinances; or (2) which has deteriorated or been damaged to an extent greater than fifty percent (50%) of the cost of replacement (new) of such building or structure; or (3) which has not been termite treated when so directed by the Building Official. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.8 Entry upon Premises.**

The Building Official, the surety and duly authorized representatives of either shall have access to the premises described in the relocation permit for the purpose of inspecting the progress of the work. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.9 Fees for Permits.**

The fees for the issuance of relocation permits shall be computed in accordance with Table No. 1-A under Section 108 of the International Building Code; provided, however, if a permit is issued after the commencement of the relocation of a building or structure for which a permit is required, an investigation and a fee shall be required accordingly to Section 108.4. (Ord. No. 929, May 23, 2012)

- **Sec. 12-3.10 Violations and Penalties.**

For violations and penalties see Section 113, Chapter 1 Administration, International Building Code. (Ord. No. 929, May 23, 2012)

- **Article 4. Factory Built Housing, Structure and Trailer Home**

- **Sec. 12-4.1 Applicability.**

- (a) These provisions are applicable to the design, construction, installation and transportation of factory-built housing, structure or trailer home within the County of Kaua'i. Unless otherwise specified this Article shall be applicable only to factory-built housing, structure and trailer home which is sold or offered for sale.
- (b) All provisions of the Building, Electrical and Plumbing Codes shall be applicable unless indicated otherwise in this Article. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.2 Definitions.**

The following terms are for specialized use within this Article.

“Certificate of approval” means a tag, tab, stamp, label, or other device issued or approved by the Building Official to indicate compliance with the statutes and these rules.

“Factory built housing” means any structure or portion thereof which is designed for use as a building or dwelling; prefabricated or assembled at a place other than the building site; and capable of complying with the standards and requirements contained in Section 12-4.5.

“Factory built structure” means any structure or portion thereof which is: designed for use as a building other than a dwelling; prefabricated or assembled at a place other than the building site.

“Installation” means the assembly of factory built housing on site and the process of affixing factory built housing to land, a foundation, or an existing building.

“Manufacture” means the process of making, fabricating, constructing, forming, or assembling a product from raw, unfinished, or semi-finished materials to produce factory built housing.

“Recreational trailer” means a portable structure, used or designed for human habitation or occupancy and built on a chassis with wheels, which is capable of being licensed as a motor vehicle, a vehicle or a trailer pursuant to Hawai'i Revised Statutes Chapter 249 and transported on a highway, but which is unable, due to its size, design, construction or other attributes, to comply with the minimum standards and requirements applicable to dwellings or buildings, or portions thereof, contained in Section 12-4.5.

“Site” is the parcel of land on which factory built housing is installed.

“Trailer homes” means factory built housing which is capable of being licensed as a vehicle or trailer pursuant to Hawai'i Revised Statutes Chapter 249 and transported upon a highway. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.3 Building Permit.**

No person shall install or relocate any factory built housing, structure and trailer home on any land within the County, or cause the foregoing to be done, without first obtaining a separate building permit from the Building Official for each such factory built housing, structure and trailer home. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.4 Building Permit Fee.**

A fee for each building permit shall be paid to the Building Official as provided in this code. The fee will be based on valuation of the factory built house structure and trailer home in place and the value of all additions or alterations to be made, including the value of carports, fences, retaining walls, etc. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.5 Building Permit Requirements.**

All factory built housing, structure and trailer home for which a building permit is sought shall be subject to the following requirements:

- (a) All provisions of Chapter 8 (Comprehensive Zoning Ordinance), Chapter 9 (Subdivision Ordinance), Chapter 12 (Building Code), Chapter 13 (Electrical Code), Chapter 14 (Plumbing Code), Chapter 15 (Building and Construction Regulations) and Chapter 15A (Fire Code) shall apply to the construction, installation and use of factory built housing, structure, and trailer homes unless specifically excluded or amended by this Article.
- (b) All factory built housing, structure and trailer home shall be permanently affixed to the ground and shall have their wheels and axles, if any, removed.
- (c) All factory built housing, structure and trailer home shall conform to: the applicable standards and requirements of the Department of Health, State of Hawai'i, including Chapter 11 (Sanitation), Title 11, Administrative Rules of the Department of Health, as updated and amended; Chapter 62, Title 11, Administrative Rules of the Department of Health, as updated and amended, relating to individual wastewater systems and wastewater treatment works; the standards and specifications contained in the Uniform Mechanical Code, as updated and amended, published by the International Code Council and the International Association of Plumbing and Mechanical Officials; and the requirements of Chapter 464 of the Hawai'i Revised Statutes.
- (d) All factory built housing, structure and trailer home must have a certificate of approval as provided in this Article.
- (e) Five (5) sets of plans and specifications for the particular model of factory built housing structure and trailer home must be provided to the Building Official. One (1) shall be left with the Planning Department. One (1) will be retained by the Building Official. One (1) approved set will be returned as a job site copy to the applicant and one (1) approved set will be submitted to the Department of Finance, Real Property Tax Division. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.6 Certificate of Approval.**

- (a) No factory built housing, structure and trailer home shall be used, or shall be sold or offered for sale for the purpose of installation or use, within this County as a dwelling, building or structure, unless it has received and bears a certificate of approval issued or approved by the Building Official.
- (b) A certificate of approval shall be issued pursuant to Section 12-4.9 and shall be granted to all factory built housing, structure and trailer home that meet the applicable requirements contained in Section 12-4.5.

- (c) No factory built housing, trailer home which has received a certificate of approval pursuant to Section 12-4.10 shall be modified in any way prior to or during installation or relocation unless approval of such modification is first made by the Building Official.
  - (1) Modifications made during the term of a pending building permit, prior to the final completion of all required construction, shall be subject to the requirements of Sections 105, 106, 108, and 109 of the International Building Code, as amended by this Chapter, including the payment of additional fees. Except as otherwise provided in this Chapter, such modifications shall not of themselves require the issuance of a new certificate of approval, pursuant to Section 12-4.10; provided, however, that the Building Official may charge for all costs resulting from the inspection and approval of such modifications.
  - (2) Modifications made after the expiration of a building permit, or after final completion of all required construction, shall require the issuance of a new building permit subject to the requirements of Sections 105, 106, 108, and 109 of the International Building Code, as amended by this Chapter. Except as otherwise provided in this Chapter, such modifications shall not of themselves require the issuance of a new certificate of approval, pursuant to Section 12-4.10; provided, however, that the Building Official may charge for all costs resulting from the inspection and approval of such modifications. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.7 Certificate Fees.**

A certificate of approval fee is required and which will be part of the building permit fee pursuant to Section 12-4.4. Fees shall be paid to the Building Official as follows:

- (a) Certificate of approval fee is required for all models of factory built housing, structure and trailer home constructed in accordance with plans and specifications and complying with the standards and requirements contained in this Article.
- (b) In addition to the certificate of approval fee, the Building Official shall require, in accordance with Section 12-4.8(b), that the person applying for the certificate of approval pay all costs incurred by the Building Official in making the inspection and determination required by Section 12-4.8(a). (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.8 Inspection.**

- (a) The Building Official shall issue no certificate of approval, pursuant to Section 12-4.10, unless the factory built housing, structure and trailer home has first been inspected and determined to be in compliance with the requirements of Section 12-4.6(b). The Building Official may make such a determination by any of the following means:
  - (1) By making an actual inspection of the individual unit or trailer home;
  - (2) By accepting a similar inspection and determination from another jurisdiction. In such a case, the Building Official must first find that the standards for construction and inspection of factory built housing, structure and trailer homes prescribed by the statutes, rules, regulations or ordinances of another jurisdiction are at least equal to the standards and requirements prescribed in this Article and that such standards and requirements are actually enforced by such other jurisdiction;
  - (3) By accepting a similar inspection and determination by the International Code Council or any other such professional organization approved by the Building Official. In such a case, the

Building Official must first find that the standards for construction and inspection of the factory built housing and trailer homes followed by the professional organization are at least equal to the standards and requirements prescribed in this Article.

- (b) All costs incurred by the Building Official in making the inspection and determination required by Subsection (a) of this Section shall be paid by the person applying for the certificate of approval. Such payment shall be made to the Building Official prior to the issuance of any certificate of approval. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.9 Transportation.**

- (a) No factory built housing, structure and trailer home which exceeds the weight, width, height or length restrictions contained in Chapter 16 Kaua'i Traffic Code or Hawai'i Revised Statutes Sections 291-34 and 291-35 shall be transported on any street or highway within this County unless permits have been obtained in accordance with Article 3 (Relocation of Buildings), Chapter 16 Kaua'i Traffic Code and Hawai'i Revised Statutes Section 291-36.
- (b) No trailer home shall be transported on its wheels on any street or highway within this County unless it is licensed in accordance with Hawai'i Revised Statutes Chapter 249 and complies with all applicable provisions of Article 2, Chapter 5 (Motor Vehicle Weight Tax) Taxation and Financial Administration, Chapter 16 Kaua'i Traffic Code, Hawai'i Revised Statutes Chapters 286, 291, 291C, and all other applicable County or State laws regulating the operation and licensing of vehicles and trailers. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.10 Relocation.**

- (a) No factory built housing, structure and trailer home which has been initially located on a lot in accordance with the provisions of this Article shall be relocated to another lot unless permits have been obtained in accordance with Section 12-4.3, Section 12-4.9 and Article 3 (Relocation of Buildings).
- (b) No factory built housing, structure and trailer home shall be relocated pursuant to Subsection (a) of this Section unless found by the Building Official to be in conformance with the standards and requirements of Section 12-4.6 existing at the time of the requested relocation. If the factory built housing, structure and trailer home no longer conforms to the then existing standards and requirements, then it shall not be relocated unless it is modified to meet such new standards and requirements. (Ord. No. 929, May 23, 2012)

- **Sec. 12-4.11 Violations and Penalties.**

For violations and penalties see Section 113, Chapter 1, Administration, International Building Code. (Ord. No. 929, May 23, 2012)

- **Article 5. Thatched Material on Exterior of Building: Protection Against Exposure Fires**

- **Sec. 12-5.1 Applicability.**

- (a) Thatched material on the exterior of buildings, including the roof, shall be permitted only for buildings used primarily for assembly, demonstration, exhibit, mercantile or nonresidential purposes. Thatched material may be any grass or leaf material cultivated, grown and harvested in the State of Hawai'i.

- (b) Thatched material shall not be permitted on any buildings or structures housing Group R, Division 3 Occupancies or any accessory buildings or structures of Group U Occupancies relating to Group R, Division 3 Occupancies.
- (c) The thatched material permitted in this Article shall be used for decorative purposes on the roof or wall of buildings. The entire building, except for the thatched material, shall comply with all applicable provisions of the Building Code.
- (d) When thatched material is used as permitted in this Article, an automatic sprinkler system shall be installed. Automatic sprinkler systems and standpipes shall be provided pursuant to the Fire Code.

Exception: Synthetic thatched material having an approved Class A fire resistance rating may be installed without automatic sprinkler system and standpipes. (Ord. No. 929, May 23, 2012)

- **Sec. 12-5.2 Violations and Penalties.**

For violations and penalties, see Section 113, Chapter 1, Administration, International Building Code. (Ord. No. 929, May 23, 2012)

- **Article 6. Energy Conservation**

- **Sec. 12-6.1 Purpose.**

This Article is for the purpose of adoption and incorporation by reference of the 2009 Edition of the International Energy Conservation Code as the Energy Code; providing amendments thereto, regulating the construction, alteration or equipment of buildings or structures in the County of Kauaʻi. This code will recognize the need for a modern, up-to-date energy conservation code that addresses the design of energy-efficient building envelopes and installation of energy efficient mechanical, lighting and power system through requirement emphasizing performance. (Ord. No. 929, May 23, 2012)

- **Sec. 12-6.2 Title.**

This Article shall be known as the Energy Code of the County of Kauaʻi, and may be cited as the “Energy Code.” (Ord. No. 929, May 23, 2012)

- **Sec. 12-6.3 Adoption of the International Energy Conservation Code.**

The International Energy Conservation Code (IECC), 2009 Edition, as copyrighted and published in 2009 by the International Code Council, Incorporated, 4051 West Flossmoor Road, County Club Hills, Illinois, 60478-5795, is by reference incorporated herein and made a part hereof as the Energy Code, subject to the following amendments. (Ord. No. 929, May 23, 2012)

- **Sec. 12-6.4 Local Amendments to the IECC.**

**101.1 Title.** This code shall be known as the Energy Conservation Code of the County of Kauaʻi, and shall be cited as such. It is referred to herein as “this code.”

**101.2 Scope.** This code applies to residential and commercial buildings. It sets forth the minimum requirement for design and construction of buildings for the effective uses of energy and is intended to provide flexibility to all the use of innovative approaches and techniques to achieve the effective use of energy.

**101.5.2 Low energy buildings.** The following buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this code shall be exempt from the building thermal envelope provisions of this code:

1. Conditioned spaces with a peak design rate of energy usage less than 3.4 Btu/h ft<sup>2</sup> (10.7 W/m<sup>2</sup>) or 1.0 watt/ft<sup>2</sup> (10.7 W/m<sup>2</sup>) of floor area for space conditioning purposes.
2. Unconditioned spaces that are non-habitable spaces.
3. Unconditioned habitable spaces are exempt from wall insulation requirements of the building thermal envelope provisions.

**103.1 General.** Plans, specifications and necessary computations shall be submitted to indicate compliance with this code. Plans, specifications, and necessary computations for work to comply with this code shall be prepared, designed, approved, certified, and stamped by a duly registered licensed professional as required by Chapter 464 of the Hawai'i Revised Statutes, for the following work:

- (A) All electrical power, equipment and lighting requirements shall be completed and certified by an electrical engineer.
- (B) All requirements of heating, ventilating, air conditioning systems and equipment, service water heating systems and equipment shall be completed and certified by a mechanical engineer.
- (C) For all elements of building envelope and building performance requirements shall be completed and certified by an architect or mechanical engineer.

**EXCEPTION:** A duly registered professional architect may prepare, design, approve, certify and stamp the following plans, specifications and necessary computations when any of the following conditions are complied with.

- (1) Lighting and/or electrical plans when the total load of all electrical work shall not exceed 35 kilo-volt amperes.
- (2) Mechanical plans when the building or structure is heated, ventilated, or equipped and cooled with any air conditioning systems with a total capacity of not more than 60,000 BTU/Hr.

Specifications and necessary computations need not be submitted when authorized by the Building Official.

**103.3.1 Approval of construction documents.** When the Building Official issues the permit, he shall affix an official stamp of approval to the specifications and each sheet of the Job Site Copy of the plans. Such approved plans and specifications shall not be changed, modified, or altered without authorization from the Building Official and all work shall be done in accordance with the approved plans. The building permit shall be posted in a conspicuous place on the site during the progress of work.

One (1) set of approved plans shall be retained by the Building Official as the official records, one set of approved plans shall be returned to the applicant as the approved Job Site Copy, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.

**103.5 Retention of construction documents.** One (1) set of approved construction documents shall be retained by the code official as required by Chapter 12, Building Code, K.C.C. 1987 as amended.



**104.4 Reinspections.** A reinspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

This section is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or reinspection.

Reinspection fees may be assessed when the building permit card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the Building Official.

To obtain reinspection, the applicant shall file an application thereof in writing on a form furnished by the Building Official and pay the reinspection fee of fifty dollars (\$50.00) for each additional inspection.

In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.

**104.5 Approved inspection agencies.** The code official is authorized to accept inspections of approved special inspection agencies, provided such agencies meets the qualifications and reliability requirements and complies with special inspections accordingly to Chapter 12, Building Code, K.C.C. 1987 as amended.

**104.8 Approval.** After required inspections indicate that the work complies in all respects with this code, a notice of inspection or certificate of occupancy shall be issued by the code official.

## **SECTION 107 FEES**

**107.1 Fees.** If the work described in an application for a permit and the plans filed therewith conform to the requirements of Chapter 12, Building Code, K.C.C., 1987 as amended, and other pertinent laws and ordinances the code official shall issue a permit therefore to the owner. Payment for any permit fee shall be paid upon the issuance of such permit. All requirements for permit fee shall comply with the requirements of the Building Code.

## **SECTION 108 STOP WORK ORDER**

**108.1 Authority.** Whenever the code official finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or dangerous or unsafe, the code official is authorized to issue a stop work order and all such order shall comply with the requirements of the Chapter 12, Building Code, K.C.C., 1987 as amended.

## **SECTION 109 BOARD OF APPEALS**

**109.1 General.** The Board of Appeals shall hear and decide cases of appeals, orders, decisions, or determinations made by the code official relative to the application and interpretation of this code. All cases of appeals shall comply with the requirements of Chapter 12, Building Code, K.C.C., 1987, as amended.

## **SECTION 110 VIOLATION AND PENALTIES**

**110.1 General.** All violations and penalties relative to this code shall comply with the requirements of Chapter 12, Building Code, K.C.C. 1987, as amended.

Section 202 is amended to read as follows:

The following paragraph is added after the definition of “BUILDING THERMAL ENVELOPE.”

**CERTIFICATION.** As used herein, the word certify shall mean an expression of the licensed professional’s opinion to the best of it information, knowledge, and belief, and does not constitute a warranty or guarantee.

The following paragraphs are added after the definition of “HUMIDISTAT.”

**ICC.** Means the International Code Council.

**IECC.** Means the ICC, International Energy Conservation Code, as copyrighted by the International Code Council.

The following paragraph is added after the definition of “SCREW LAMP HOLDERS.”

**SECTION.** Means a section of a chapter of the International Energy Conservation Code.

The first sentence of Section 401.3 is amended to read as follows:

When required by the code official, a permanent certificate shall be posted on or in the electrical distribution panel.

Sections 402.1.1.1 to Section 402.1.1.8.1 are added to read as follows:

**402.1.1.1 Ceiling insulation alternative.** Insulation requirements for ceilings in unconditioned habitable spaces constructed in climate zone one (1) shall meet one (1) of the design options in Table 402.1.1.1.

**402.1.1.2 Definitions.** For the purpose of this Section, the following terms shall be defined as follows:

**GROSS AREA OF OPAQUE ROOF SURFACES.** Gross area of opaque roof surfaces means the total surface of the roof assembly exposed to outside air or unconditioned spaces. The opaque roof assembly shall exclude skylight surfaces, service openings, and overhangs.

**NET FREE VENT AREA.** Net free vent area means the total area through which air can pass in a screen, grille face or register.

**ROOF AREA.** Roof area means attic floor area; or, if there is no attic, “roof area” means the horizontal projection of a roof area measured from the outside surface of the exterior wall.

**402.1.1.3 Construction Documents.** Plans shall be submitted which indicate insulation type, thickness, and location; ventilation opening types, sizes and locations; radiant barrier location; and roof surface type as appropriate, depending on the option selected from Table 402.1.1.1.

**402.1.1.4 Roof insulation.** Roof insulation shall be provide as follows:

1. In buildings with an attic space provide either:
  - 1.1. R-30 insulation installed above the ceiling level, or
  - 1.2. R-19 insulation installed at the roof level between the roof framing members.
2. In buildings without an attic space provide either:
  - 2.1. R-19 insulation installed at the roof level between the roof framing members, or
  - 2.2. R-15 entirely above the roof deck.

**402.1.1.5 Ventilation.** Ventilation shall be provided by at least one (1) of the following:

1. A baffled ridge vent installed in accordance with manufacturer's instructions in addition to lower inlet openings to provide a total of no less than one (1) square foot of net free vent area for each 300 square feet of roof area. No less than 30 percent of the total vent area shall be in either the ridge vent or the lower half of the ventilated space.
2. A solar-powered exhaust fan that provides at least one (1) cubic foot per minute of airflow for each square foot of roof area.
3. Upper and lower vents with total net free vent area of at least one (1) square foot for each 150 square feet of roof area. At least 30 percent of the total vent area shall be in the upper of the ventilated space and at least 30 percent of the total vent area shall be in the lower half of the ventilated space.

**402.1.1.6 Radiant Barrier.** A radiant barrier shall have an emissivity of no greater than 0.05 as tested in accordance with ASTM E-408. The radiant barrier shall be installed with the shiny side facing down and with a minimum air gap thickness of 3/4-inch below. The radiant barrier may be securely attached to the roof framing or may be laminated to the bottom of the roof sheathing.

**402.1.1.7 Cool Roof.** A cool roof shall have an infrared emittance of no more than 0.75 when tested in accordance with ASTM E-408 and a high solar reflectance. The manufacturer's test results shall be acceptable for compliance.

**402.1.1.8 Roof Heat Gain Factor.** The Roof Heat Gain Factor (RHGF) shall not exceed 0.05 when calculated as described in Equation 402.1.1-1.

**Equation 402.1.1-1:**  $RHGF = U_r \times a \times RB$

Where:

- RHGF = Roof Heat Gain Factor (Btu/ft<sup>2</sup>-h-°F)
- $U_r$  = overall thermal transmittance value for the gross area of opaque roof surfaces (Btu/ft<sup>2</sup>-h-°F)
- a = roof surface absorptivity. Between 0.3 and 1.0 (unitless)
- RB = Radiant Barrier credit. Equals 0.33 if a radiant barrier is installed and 1.00 otherwise (unitless). Radiant barrier installation must comply with Section 402.1.1.7.1 to qualify for radiant barrier credit.

**402.1.1.8.1 Radiant Barrier Credit.** To qualify for the radiant barrier credit (RB) described in Section 402.1.1.8, the installation of the radiant barrier must meet the following criteria:

1. The emissivity of the radiant barrier must be 0.10 or less. The manufacturer must provide test data or documentation of the emissivity as tested in accordance with ASTM E-408.
2. The radiant barrier must be securely installed in a permanent manner using one of the following installation methods:
  - 2.1. The radiant barrier shall be draped with the shiny side facing down over the top cord of the truss before the roof deck is installed. A minimum air gap of 3/4-inch must be provided between the radiant barrier and the roof deck above at the center of the span. A minimum 3/4-inch air gap must also be provided between the radiant barrier and the ceiling or insulation below.

- 2.2. The radiant barrier shall be stretched with the shiny side facing down between the top cords of the truss and stapled or otherwise secured at each side. A minimum air space of ¾-inch above and below is required.
- 2.3. For attic installations only, the radiant barrier shall be stapled or otherwise secured to the bottom surface of the top cord of the truss and draped below with the shiny side facing down. A minimum air space of ¾-inch above and below is required.
- 2.4. For open beam ceiling construction only, the radiant barrier shall be laid on top of the roof deck with the shiny side facing up and a minimum ¾-inch air gap between the radiant barrier and the roofing material above. The roof slope must be greater than or equal to 140 from horizontal.
3. At least one (1) square foot of free area for ventilation shall be provided per 150 square feet of attic floor area, or in the case of vaulted or open beam ceilings, per 150 square feet of ceiling area. In vaulted or open beam ceilings, the air space shall be vented with vent area approximately evenly distributed between the top and bottom. In vaulted ceiling, vents shall be provided for each air space between rafters.

Table 402.1.1 is amended to read:

**Table 402.1.1**  
**Insulation and Fenestration Requirements by Component**

Climate Zone	Fenestration U-Factor	Skylight <sup>b</sup> U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value	Floor R-Value	Basement <sup>c</sup> Wall R-Value	Slab <sup>d</sup> R-Value & Depth	Crawl Space Wall R-Value
1	1.20	0.75	0.30	See Section 402.1.1.1	13	3	NR	NR	NR	NR
2	0.75	0.75	0.30	30	13	4	13	0	0	0
3	0.65	0.65	0.30 <sup>e</sup>	30	13	5	19	0	0	5/13
4 except marine	0.40	0.60	NR	38	13	5	19	10/13	10, 2 ft	10/13
5 and marine 4	0.35	0.60	NR	38	19 or 13+5 <sup>g</sup>	13	30 <sup>f</sup>	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	19 or 13+5 <sup>g</sup>	15	30 <sup>f</sup>	10/13	10, 4 ft	10/13
7 and 8	0.35	0.60	NR	49	21	19	30 <sup>f</sup>	10/13	10, 4 ft	10/13

For SI: 1 foot = 304.8 mm.

NR = No Requirement.

- R-values are minimums. U-factors and SHGC are maximums. R-1 shall be permitted to be compressed into a 2 x 6 cavity.
- The Fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- The first R-value applies to continuous insulation. The second to framing cavity insulation; either insulation meets the requirements.
- R-5 shall be added to the required slab edge R-value for heated slabs.
- There are no SHGC requirements in the marine zone.
- Or insulation sufficient to fill the framing cavity, R-19 minimum.
- "13 + 5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

Table 402.1.1.1 is added to read:

**Table 402.1.1.1**  
**Ceiling Insulation Alternative**

Design Option	Design and Construction Components				
	Roof Insulation (Section 402.1.1.4)	Attic Ventilation (Section 402.1.1.5)	Radiant Barrier (Section 402.1.1.6)	Cool Roof (Section 402.1.1.7)	Roof Heat Gain Factor below 0.05 (Section 402.1.1.8)
1	R				

2 <sup>a</sup>		R	R		
3 <sup>a</sup>			R	R	
4 <sup>a</sup>					R

R = Required

<sup>a</sup> Design option is not allowed at building sites above a 2,400-foot elevation.

Table 402.1.3 is amended to read:

**Table 402.1.3**  
**Equivalent U-Factors<sup>a</sup>**

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass Wall U-Factor	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
1	1.2	0.75	0.035	0.082	0.197	NR	NR	NR
2	0.75	0.75	0.035	0.082	0.165	0.064	0.360	0.477
3	0.65	0.65	0.035	0.082	0.141	0.047	0.360	0.136
4 except marine	0.40	0.60	0.030	0.082	0.141	0.047	0.059	0.065
5 and marine 4	0.35	0.60	0.030	0.060	0.082	0.033	0.059	0.065
6	0.35	0.60	0.026	0.060	0.060	0.033	0.059	0.065
7 and 8	0.35	0.60	0.026	0.057	0.057	0.033	0.059	0.065

NR = No Requirement

<sup>a</sup> Nonfenestration U-Factors shall be obtained from measurement, calculation or an approved source.

Section 402.3.3 is amended read:

**402.3.3 Glazed fenestration exemption.** Up to 15 square feet (1.4m<sup>2</sup>) of glazed fenestration per dwelling unit shall be permitted to be exempt from U-factor and SHGC requirements in Section 402.1.1. North-facing windows and windows with a projection factor of 1.0 or more shall be permitted to be exempt for SHGC requirements in Section 402.1.1. This exemption shall not apply to the U-factor alternative approach in Section 402.1.3 and the Total UA alternative in Section 402.1.4. SHGC requirement for jalousie windows shall be 0.65.

Section 402.4.1.1 is added to read:

**402.4.1.1 Unconditioned building exemption.** Unconditioned residential buildings are exempt from compliance with Section 402.4. The free-vent fenestration area of unconditioned buildings shall be no less than 14% of the floor area. All interior doors shall be capable of being secured in the open position and ceiling fan stub-ins shall be provided to living areas and bedrooms.

The exceptions in Section 402.4.4 are amended to read:

**Exceptions:**

1. Site-built windows, skylight and doors.
2. Jalousie windows shall not exceed 1.2 cfm per square foot (6.1 L/s/m<sup>2</sup>).
3. Residential pools.

Entire Section 503.2.9 is amended to read:

**503.2.9 Mechanical system commissioning and completion requirements.** Prior to the issuance of certificate of occupancy, the design professional shall provide a written statement of system completion in accordance with Section 503.2.9.1 through 503.2.9.2.

**503.2.9.1 System commissioning.** Commissioning is a process that verifies and documents that the selected building systems have been designed, installed, and function according to the owner's project requirements and construction documents. Drawing notes shall require commissioning and completion requirements in accordance with the section. Drawing notes may refer to specifications for further requirements. Copies of all documentation shall be given to the owner.

**503.2.9.1.1 Commissioning plan.** A commissioning plan shall include as a minimum the following items:

1. A detailed explanation of the original owner's project requirements.
2. A narrative describing the activities that will be accomplished during each phase of commissioning, including guidance on who accomplishes the activities and how they are completed.
3. Equipment and systems to be tested, including the extent of tests.
4. Functions to be tested (for example calibration, economizer control, etc.).
5. Conditions under which the test shall be performed (for example winter and summer design conditions, full outside air, etc.).
6. Measurable criteria for acceptable performance.

**503.2.9.2 Systems adjusting and balancing.** All HVAC systems shall be balanced in accordance with generally accepted engineering standards. Air and water flow rates shall be measured and adjusted to deliver final flow rates within 10% of design rates. Test and balance activities shall include as a minimum the following items:

1. Air systems balancing: Each supply air outlet and zone terminal device shall be equipped with means for air balancing in accordance with the requirements of Chapter 6 of the International Mechanical Code. Discharge dampers are prohibited on constant volume fans and variable volume fans with motors 10 hp (18.6 kW) and larger. Air systems shall be balanced in a manner to first minimize throttling losses then, for fans with system power of greater than 1 hp, fan speed shall be adjusted to meet design flow conditions.

**Exception:** Fan with fan motors of 1 hp or less.

2. Hydronic systems balancing: Individual hydronic heating and cooling coils shall be equipped with means for balancing and pressure test connections. Hydronic systems shall be proportionately balanced in a manner to first minimize throttling losses, then the pump impeller shall be trimmed or pump speed shall be adjusted to meet design flow conditions. Each hydronic system shall have either the ability to measure pressure across the pump, or test ports at each side of each pump.

**Exceptions:**

1. Pumps with pump motors of 5 hp or less.
2. When the throttling result is no greater than 5% of the nameplate horsepower draw above that required if the impeller were trimmed.

Chapter 6 is amended by adding the following reference to ASTM Standards to read:

ASTM E 408-2008, Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection Meter Techniques 402.1.1.6, 402.1.1.7, 402.1.1.8.1.

(Ord. No. 929, May 23, 2012)

